

MATERIAL HANDLING **FLOW**



FEBRUARY 1955

HANDLING • AUTOMATION • PACKAGING AND SHIPPING

Selecting a Hoist 67

Calculation of Warehouse Volumes . . . 76

Mechanical Sweepers. 82

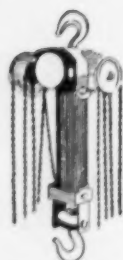
Unusual Handling 92

Radar Protects Shipments 118

Packaging 40,000 Units per Minute! . . 124

OHIO

Material Handling EQUIPMENT

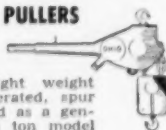


OHIO CHAIN HOISTS

A complete line of chain hoists for every application. Capacities from 1/4 to 40 tons.

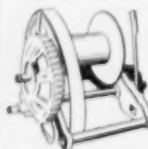
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For the trucking industry—and for *all* materials handling where work space is a problem—the new "DOCKER" is the market's top-performing truck! The shortest and most compact truck in its class, it also combines the best grade clearance with the lowest step height. Its lift and travel speeds give the "DOCKER" superior productivity, while its 4-wheel suspension and lower center of gravity provide the maximum stability needed for safe, reliable operation. Investigate the new "DOCKER" today, to discover the greatest efficiency in congested-area materials handling available today!

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FEBRUARY, 1955

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heavy handling costs less WITH A Whiting Crane!



The overhead crane that saves its user money is one that is *just right* for its specific job. "Too little" crane is as costly as "too much" crane. Whiting—with more than 60 years' experience in crane construction for firms throughout industry—engineers "just enough" crane for *future* as well as *immediate* needs. More efficient crane operation also helps to lower costs. For example, the new Whiting Selectodyne controls assure the fastest, most accurate lifting, moving and spotting. Ingenuity of Whiting Crane design makes possible large savings in maintenance. Better materials are used in Whiting Cranes... anti-friction bearings and precision-made gears reduce friction and wear problems... securely-fitted shafts and flanged couplings that stay tight provide peak performance. These, and many other outstanding Whiting Crane features mean a longer, trouble-free life that results in low-cost handling! Before you invest in any crane... investigate the Whiting Crane!

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So start getting better tire savings in your plant—call your Goodyear Dealer today.

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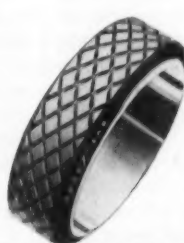
To help you solve tough industrial tire problems, Goodyear maintains a staff of fully qualified technical experts. For their free recommendations, write Goodyear, Industrial Tire Division, Akron 16, Ohio.



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SMOOTH SOLID



ALL-WEATHER TREAD



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SEMI-PNEUMATIC CUSHION

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GOODYEAR

INDUSTRIAL TIRES

All-Service, All-Weather, Xtra Cushion—T. M.'s
The Goodyear Tire & Rubber Company, Akron, Ohio

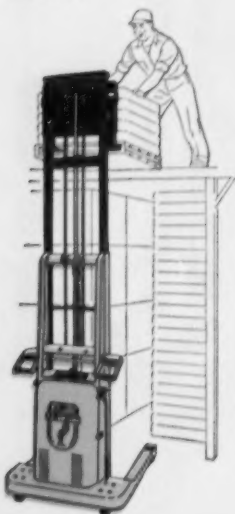
We think you'll like "THE GREATEST STORY EVER TOLD"—every Sunday—ABC Radio Network—THE GOODYEAR TELEVISION PLAYHOUSE—every other Sunday—NBC TV Network

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FEBRUARY, 1955



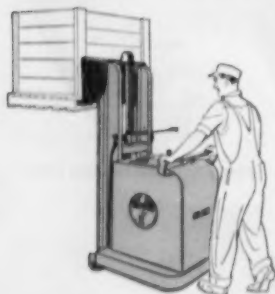
Standard Platform
Model 14



110" Telescopic Lift



DRUMTOWER
Interchangeable with forks



THE COUNTERWEIGHT
Direct-Pallet-Approach

MORE OUTPUT

from every department

with

BIG JOE

HYDRAULIC LIFTS

I-N-BETWEEN HANDLING*

**eliminates central dispatch, reduces
down time, lowers capital investment!**

Materials Handling officials today have a greater responsibility than ever before . . . thus greater opportunity for advancement. Over and above their job of providing for the regular flow of materials is the task of assisting management in the OVERALL job of promoting efficiency throughout the plant.

Handling specialists know, for example, that costly delays and down time occur in some departments because a central dispatching system cannot meet all demands for equipment simultaneously . . . that equipment will be idle one minute, overloaded the next. Some departments have to play "second fiddle" to others . . . lose valuable production time over and over again!

The "In-Between Handling" Sys-

tem provides immediate and specialized fork or platform lift truck performance for every department . . . yet reduces capital investment and operation expense. You can avoid production hold-ups. You can fit the right tool to the right job economically. You can custom build a "fleet" of "BIG JOE" lift trucks for individual department service at a fraction of the cost of power-driven fork trucks.

More than 40 "BIG JOE" hand and battery operated models permit you to HAND PICK equipment for each type of job. No matter what you handle there's a special "BIG JOE" solution for you.

Be sure to write for the IBH* handbook which explains what "In-Between Handling" means to you.



*Short distance hydraulic manipulation of materials too heavy for manual handling yet not requiring high priced power driven equipment.

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FLOW Magazine is published by The Industrial Publishing Group, a Division of Telenews Productions, Inc., which also publishes:

FLOW'S MATERIAL HANDLING ILLUSTRATED
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MATERIAL FLOW

February, 1955
Vol. 10, No. 5

CONTENTS

FEATURES

Selecting a Hoist	67
How the Marshall Plan Contributed to Handling at Pontedera	74
Calculation of Warehouse Volumes	76
Cost Cutting Ideas	80
Mechanical Sweepers	82
Mechanized Handling Increases Production at Inspection Centers	84
Patent Review	88
A Practical Manual of Material Handling Procedure	90
Unusual Handling	92
What's the Real Value of Narrow Aisles?	94
"Sweet" Jobs for Cranes	96

PACKAGING AND SHIPPING SECTION

Radar Protects Shipments	118
Unitizing System for Soft Goods	122
Packaging 40,000 Units per Minute!	124
Remote Weighing for Better Handling	126
Packaging & Shipping Idea of the Month	128
What's New in Packaging & Shipping Equipment	130

DEPARTMENTS

Advertisers' Index	179
Association and Society News	42
Calendar of Events	16
Classified Advertisement Section	178
Highlights of the Month's News	26
Letters to the Editors	10
Literature Featured in Ads	52
Men in the News	32
News From the Sales Field	58
News, Views & Trends	18
What's New in Equipment	48
What's New in Useful Free Literature	142

FLOW is indexed regularly by Engineering Index, Inc.

SUBSCRIPTION RATES

United States and possessions—	Canada—\$4.00 per year, \$6.00 for 2 years.
\$3.00 per year, \$5.00 for 2 years.	
Subscriptions in the United Kingdom: £1.10 per annum, payable in Sterling to our London Office.	Foreign—\$5.00 per year. Single copy price—30 cents.

Published Monthly

"Acceptance under section 34.64 P. L. & R. authorized at Pontiac, Illinois."

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ELPAR FORK TRUCKS



Firms in over 300 branches of industry, transportation, and commerce rely on ELPAR trucks for dependability. Whether they use one truck or a hundred, these firms have continued to buy ELPAR trucks for almost half a century. ELPAR trucks have this reputation because of Elwell-Parker's policy of "building up to quality—not down to price".

There are 8 models in the ELPAR "Air-Rights" series of fork trucks. Capacities start at 2,000 lbs. and increase to 10,000 lbs. Some of their chief advantages are described on the opposite page . . . Look beyond first cost—Why feed an expensive machine tool or press with an inferior truck? Get a truck you can depend on—buy an ELPAR fork truck.

ELPAR TRUCKS ARE BUILT TO MATCH THE FINEST MACHINERY IN YOUR PLANT

Built Up To Quality Not Down To Price



Brewery

CHEAPER, CLEANER POWER—ELPAR fork trucks operate for pennies per day because they have electric power. This means: No idling waste of fuel. No noise or vibration. Fewer parts to wear. No battle with exhaust fumes. No interference with radio communication.



Food Processing Plant

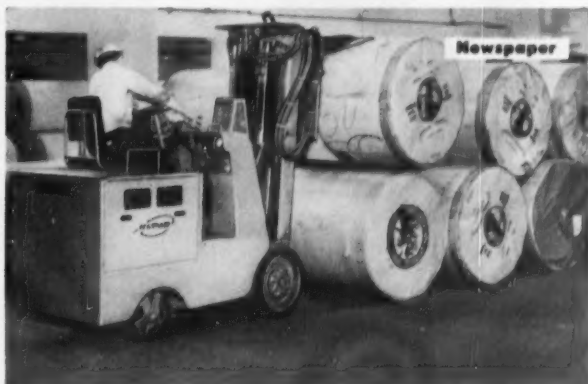
LESS MAINTENANCE COSTS—ELPAR design features packaged unit assemblies for fast, easy maintenance. Accessibility is basic. Preventive maintenance programs are explained by the ELPAR Service Engineer who installs each new truck and makes periodic follow-up calls.

BUILT-IN DEPENDABILITY—ELPAR trucks commonly give 15 to 20 years service. In mixed fleets of trucks, they always get the toughest jobs. Rugged alloy steels, wide use of forgings and reinforcement of critical parts prevent excessive wear or break downs that cause production bottlenecks.

ADVANCED HANDLING TECHNIQUES—For handling loads of unusual shape or nature, a score of special attachments are available on ELPAR fork trucks. Elwell-Parker engineers have unmatched experience in supplying these ingenious, money-saving answers to special handling problems.



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Trucks

"The Pros
& Cons
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Request literature desired by writing The Elwell-Parker
Electric Company, 4232 St. Clair Avenue, Cleveland 3, Ohio

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NEW ELPAR LEASE PLANS AND TIME PAYMENT PLANS

These highly flexible plans offer advantages for many uses. Ask for details.

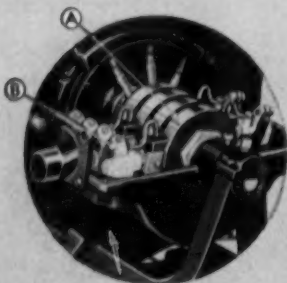


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with...*

**APPLETON
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All types of electric, air and liquid models...small and large sizes...unlimited variety of standard hose or cable lengths.



APPLETON engineering and craftsmanship is notable in every REELITE. Copper collector rings "A" are accurately machined and have ample capacity to carry rated current. Brushes "B" set in a floating tension assembly maintain alignment and pressure. Grease packed ball bearings and spring housing require no maintenance.

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Selected
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● You can safely speed materials handling...with the correct APPLETON REELITE for your particular needs. APPLETON REELITES for crane, conveyor or other materials handling operations give dependable, year-after-year performance. Cables pay out, latch, and rewind automatically while power flows without interruption. Cable kinking, tangling and breakage are avoided. Before you buy, be sure to investigate APPLETON REELITES...famous for heavy duty quality construction, faultless performance and a minimum of maintenance. Detailed information available on request.

Write for further information, Now!



In magnet lifting operations APPLETON REELITE dependability means unfailing power flow...no dropped loads, improved safety records!

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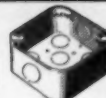
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"ST" Series Connectors



Outlet Boxes, Covers, Switch Boxes

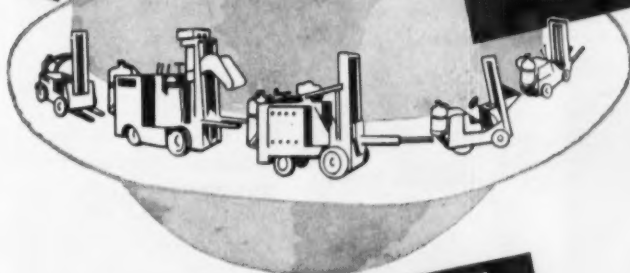
Rely on **APPLETON**...the Standard for Better Wiring

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FLOW

MARVEL-SCHEBLER

LPG Carburetion Systems



BE ECONOMY-WISE!
CONVERT YOUR LIFT TRUCKS
TO LPG AND SAVE!

INDUSTRY'S FIRST CHOICE FOR FORK LIFT TRUCK CONVERSIONS!

Thousands of industrial users of gasoline-powered lift trucks have already learned the advantages of converting to LPG. Estimates show that a big percentage of the more than 170,000 fork lift trucks at work in American industry will be using LPG by the end of 1955.

• **NO OBJECTIONABLE EXHAUST FUMES**

Both butane and propane burn without odor, making them highly preferable for use in warehouses and other closed industrial areas.

• **LONGER ENGINE LIFE**

Lower maintenance costs, too! LPG-operated engines will run up to 4 times as many hours longer than gasoline before major overhaul is necessary.

• **LOWER FUEL COSTS**

LPG is 3c to 7c cheaper per gallon than gasoline. Actual fleet cost comparisons show a savings of \$300 per truck in one years time.

• **NO OIL DILUTION**

As a result, oil service life is increased up to 3 times longer.

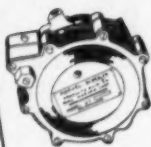


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A COMPLETE LINE OF LPG EQUIPMENT FOR ALL CONVERSION NEEDS!



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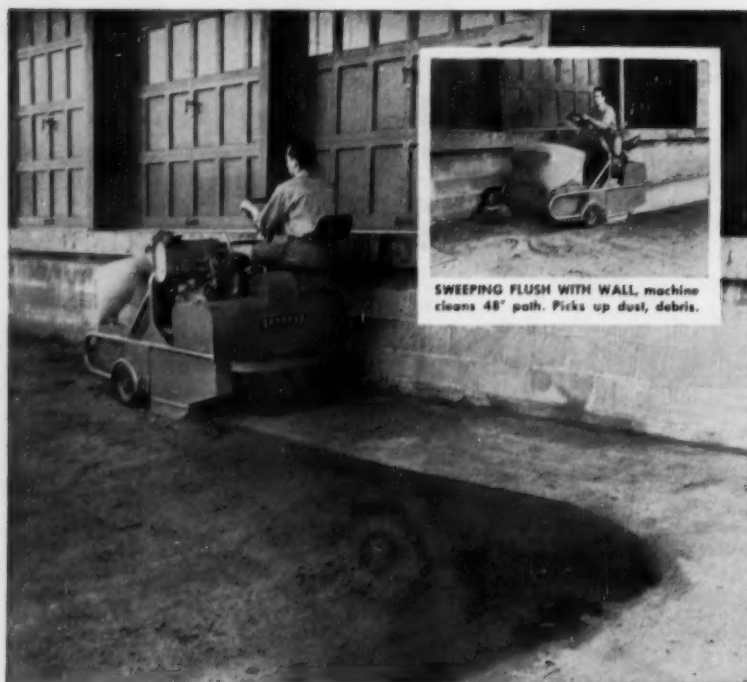


**MARVEL-SCHEBLER PRODUCTS DIVISION
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Without obligation, please send us complete information on your LPG equipment for fork lift truck conversion. (Catalog F-2).

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 FIRM NAME
 ADDRESS
 CITY STATE

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SWEEPING FLUSH WITH WALL, machine cleans 48" path. Picks up dust, debris.

WITH A TENNANT "75" SWEEPER, one man sweeps this path in about 5 seconds.

he does a faster, cleaner job than a 3 to 12-man crew

In a few fast seconds, one man sweeps the path shown here—at a rate a skilled pushbroom crew of 3 to 12 men couldn't begin to equal.

And note the *extra clean* job he does with this TENNANT Sweeper. He sweeps a uniformly clean 48" path . . . works flush with the wall . . . turns in a 5 ft. radius . . . can dump the loaded dirt hopper in 30 seconds.

Labor-saving results like this, plus heavy-duty construction, shows why a TENNANT Sweeper can usually pay for itself in 1 to 6 months—in manhours alone. Write for additional cost-saving details.



G. H. TENNANT CO.
2576 N. 2nd Street
Minneapolis 11, Minn.

POWER SWEEPERS

INDUSTRIAL MAINTENANCE EQUIPMENT

G. H. TENNANT COMPANY

2576 N. 2nd Street, Minneapolis 11, Minnesota

Please send more details on manhour-saving performance of NEW Tennant Power Sweepers.

☐ 24" path; ☐ 36" path; ☐ 48" path. ☐ Gas powered; ☐ Electric.

Name _____ Title _____

Company _____

Address _____

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LETTERS to the editors

"Complete Picture Of Complex Problem"

To FLOW:

Your series on "A Practical Manual of Material Handling Procedure" has developed into the most complete picture of this complex problem to come to my attention.

I have decided to assemble the series into a manual for training reference, but find two issues are apparently lost. Are tear sheets available for Installment 1 (May, 1954) and Installment 4 (August, 1954)? I would greatly appreciate receiving these to complete my series.

J. W. Jones
Sears, Roebuck and Co.
Minneapolis, Minn.

In view of the numerous requests for reprints of the McClelland-Brady series, "A Practical Manual of Material Handling Procedure", FLOW is considering a plan to compile them in brochure form, for sale as a reference or text book.

How many copies of the collected articles would be required to meet demand, we do not know. Early word from material handling men, schools, colleges, libraries and trade groups who want the brochure at rock-bottom cost, will be appreciated.

Progressive Canada

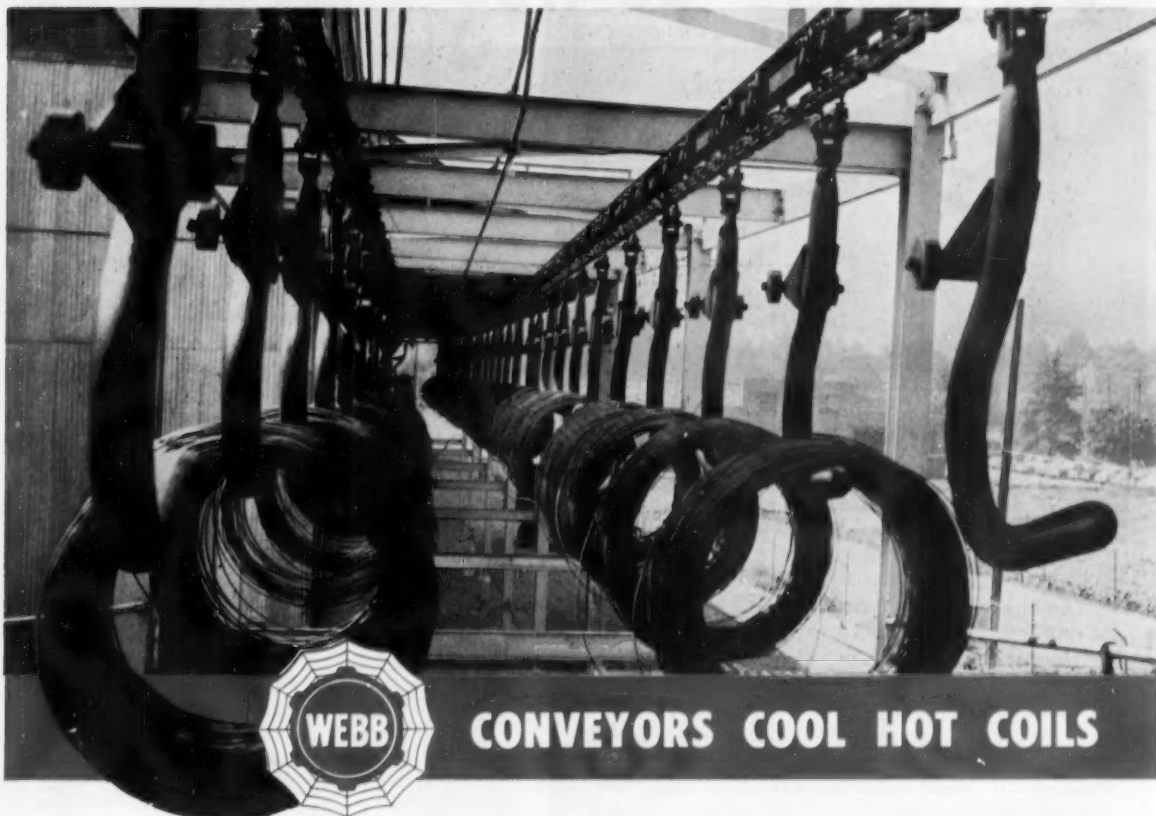
To FLOW:

The executives of the American Material Handling Society, Montreal Chapter, join me in extending thanks for coverage supplied by your magazine, for the Regional Material Handling Exposition sponsored by our Chapter last October at the Royal Canadian Hussars' Armory.

Reports from exhibitors and visitors alike acclaim the show as the

JERVIS B. WEBB

CONVEYOR ENGINEERING, MANUFACTURE, INSTALLATION and AUTOMATION



Here's how an Indiana steel mill utilized Webb engineering, manufacturing and installation experience to secure an automatic conveyor system that handles hot rod coils all the way from reels to storage and shipping without a hand touching them.

Starting at the laying and pouring reels, the 630 pound coils of hot steel are automatically placed on a high speed (240 F.P.M.) slot conveyor by means of an electrically powered rack and pinion pusher. When a coil reaches the end of the slot conveyor, another pusher transfers it onto the drag conveyor where automatic water quenching takes place. Because the drag conveyor travels at an average speed of 18 F.P.M. and has dogs located on six foot centers, it was necessary to install electrical interlocks that permit the pusher to operate only when there is clearance for the coil.

Transfer of coils from drag to trolley conveyor is also automatic—a cam actuated bobber at the end of the drag conveyor is properly co-ordinated to tilt each coil so hooks on trolley conveyor can enter the coil and lift it. The overhead trolley conveyor is approximately 1400 feet long and handles these heavy coils at an average rate of one every 20 seconds.

An automatic unloader at the end of the trolley conveyor is an excellent example of Webb automation. This unit consists of a vertical shaft and six rotating horizontal arms. Each arm receives a predetermined number of coils from the trolley conveyor before automatically indexing the next arm to the unloading position. Coils are removed from arms by either crane hooks or ram type tractor for delivery to storage or an adjoining building for further processing.

Write to us on your company letterhead and we will be happy to place your name on the Webb mailing list to receive factual technical information on conveyor installations, case history reports, and new product literature.

JERVIS B. WEBB CO.

Specialists in Custom Conveyor Systems

8935 ALPINE AVENUE • DETROIT 4, MICHIGAN

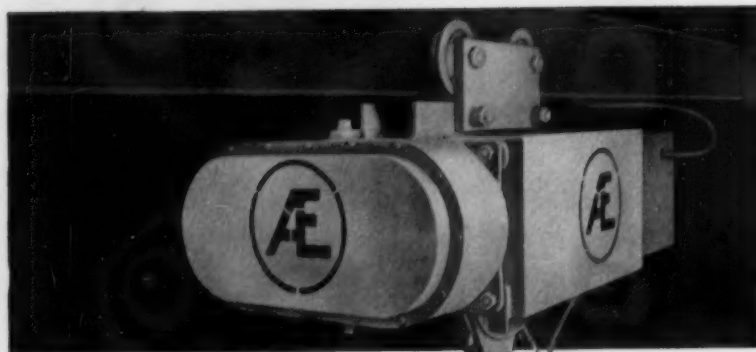
Offices and Representatives Throughout The World • FACTORIES: Detroit • Los Angeles • Hamilton, Ontario
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FEBRUARY, 1955

4189

FOR ROCK-BOTTOM HANDLING COSTS...

STANDARD LO-HED

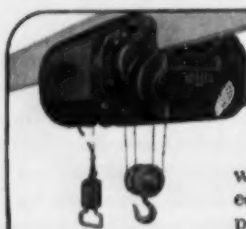


**Truly a STANDARD hoist...
ready for immediate delivery**

FOR A HOIST in the 2- and 3-ton range you'll get more for every dollar with AE's new heavy duty "Standard" Lo-Hed. This is a completely *modern* hoist; the last word in engineering and materials; quantity-produced; packed with extras at no extra cost.

"Standard" Lo-Hed's balanced design is tops for crane, monorail and stationary service...unmatched for simplicity and maintenance ease. Welded steel chassis combines rigidity and light weight. Straight line spur gear drive abolishes worm-wheels, extended shafts and split gear combinations. Lower limit safety switch is standard... no extra charge!

For economical materials handling, write for full information on the "Standard" Lo-Hed...or on the Customized Lo-Hed if you have special requirements. American Engineering Co., 2531 Aramingo Ave., Philadelphia 25, Pa.



FAMOUS CUSTOMIZED LO-HED

For lifts of more than 20 feet... for low headroom... for loads from 1/4 ton to 12 tons... a Customized Lo-Hed Hoist will bring you the same speed, efficiency and economy that have cut handling costs in plants from coast to coast.

AMERICAN ENGINEERING



COMPANY

Philadelphia 25, Penna.

Affiliated Engineering Corporations, Ltd., Montreal 16, P. Q.
Bawden Industries Ltd., Toronto 3, Ont.

AE Products are: Marine Dock Auxiliaries, Hoist-Shovels and Hydramite Fluid Power, Lo-Hed Hoists, Lo-Hed Car Pullers, Trolley and Perfect Spread Stokers.



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LETTERS

Continued

best of its kind ever held in the Montreal area. Requests have been received for future repeat performances.

We of the Montreal Chapter feel that the articles you published in your magazine contributed greatly to the caliber of visitors who attended our show and made it such a success.

Once again—our sincere thanks for your valued assistance.

E. Dupre, Chairman
Regional Material Handling
Exposition
Montreal, Canada

Even In The Philippines

To FLOW:

Thank you for your letter of December 20 enclosing the four FLOW articles requested.

Perhaps you would better appreciate how those articles have immeasurably enriched my limited reference literature on material handling if you take into account the effects of the last war, from which my country has not yet fully recovered, on public and private libraries, and the infant stage of industrialization of the Philippines.

Please accept my boundless gratitude for the assistance you have given me.

Mariano F. Nicanor
Manila, Philippines

FLOW is known the world over for outstanding material articles, and we'll be glad to help our neighbors in the Islands.

Wants Dates

To FLOW:

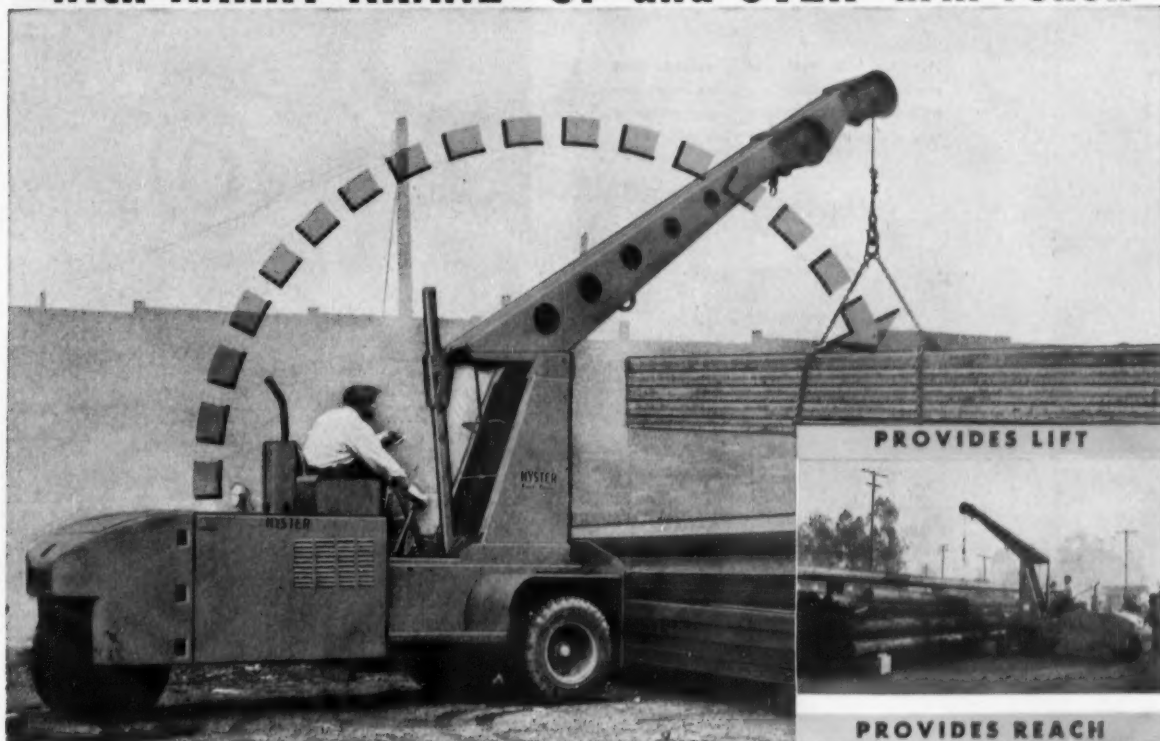
Would you kindly advise the dates of the next National Material Handling Exhibition, as we should like to make arrangements for attendance.

E. M. Wilcox
Canada Tool and Supply Co.
Toronto, Canada

Chicago's International Amphitheatre will house the 6th National Material Handling Exposition, May 16-20. Make a note now to visit the FLOW booth. We'd like to welcome you.

SPEED UP YARD WORK

with KARRY KRANE® "UP and OVER" arm reach



HERE'S LOW COST MATERIALS HANDLING THAT SPEEDS UP YARD OPERATIONS.

VERSATILE KARRY KRANE (10,000-LB CAP.) SPEEDS IN AND OUT-STORAGE MOVE-

MENT OF NON-PALLETIZED STOCK. UNSURPASSED FOR GONDOLA AND VAN TRUCK

LOADING ON AND OFF-DOCK. HIGHLY MANEUVERABLE FOR EMERGENCY AND UTILITY

LIFTING, TOWING. CALL YOUR HYSTER® DEALER TODAY OR WRITE FOR BOOKLET 1236.



THERE'S PROFIT IN
**HYSTER
POWER**

HYSTER COMPANY

2931 N. E. CLACKAMAS STREET.....PORTLAND 8, OREGON
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HYSTER N.V.NIJMEGEN, THE NETHERLANDS

Four Factories: Portland, Oregon; Danville, Illinois; Peoria, Illinois; Nijmegen, The Netherlands

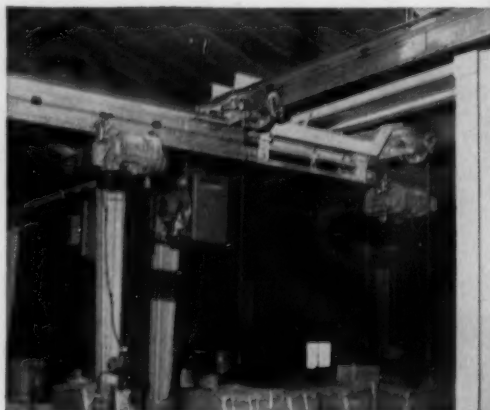
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for smooth operation at low maintenance cost use.....

AMERICAN MONORAIL CRANES

Three-ton hoist hook service extends from craneway to craneway by finger-tip controlled passage of carrier across crossover with cranes interlocked at each end.



One-ton hoist operated from crane bridge to crane bridge interlocked at crossover between craneways.

Three MonoRail cranes are interlocked to form passageway for transfer from receiving dock to steel storage area. Crane in foreground interlocks with spur track to each shear.



To handle variable loads over maximum areas, MonoRail Cranes offer smooth travel, easy movement, interlocking service between and beyond crane-ways, low initial cost and most

important low maintenance cost. American MonoRail engineers are experienced in all phases of "up and over" handling. They are available for free consultation at your convenience.

Write for C-1 Bulletin



AMERICAN

OVERHEAD
HANDLING
EQUIPMENT

MonoRail

COMPANY

13129 ATHENS AVENUE • CLEVELAND 7, OHIO

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New COLSON Electraulic Liftable feeds presses easily and quickly

*...saves time
and manpower*



This new COLSON Electraulic Liftable quickly raises heavy sheets to press table level for easy, rapid press feeding and for receiving processed pieces.

It is operated by electrically-controlled hydraulic power with convenient foot controls to raise or lower table... leaving operator's hands free to guide stock. Available for automatic press feeding through one set of coordinated press and liftable controls.

Liftable shown above is stationary. It is easily moved by attaching crane to lifting eyes at bottom of frame. Caster-mounted liftables also available. Capacities up to 15 tons.



Little brother of the Colson Electraulic Liftable. Chain and screw mechanism raises or lowers table top from 28" to 42" from floor. Positive cam locks hold table solidly at any height. 2000 pounds capacity.

Write today for free descriptive literature

THE



CORPORATION

Elyria, Ohio

CASTERS • HAND TRUCKS • LIFT JACK SYSTEMS
HYDRAULIC, ELECTRIC AND MECHANICAL POWER LIFTS
AND TRANSPORTS

Practical Idea for the Production Man

Efficient electric hoists...to move materials overhead and release floor space for more valuable operations.



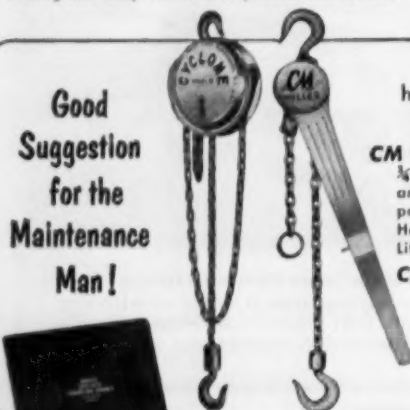
CM COMET ELECTRIC CHAIN HOIST

$\frac{1}{2}$ to 2 ton capacities—Pendant rope or push button control. Lifetime lubrication. Herc-Alloy double duty load chain. Sensitive control for spotting loads. Heavy duty brake. Upper-lower limit switches.



CM METEOR ELECTRIC WIRE ROPE HOIST

$\frac{1}{2}$ to 5 ton capacities—Compact, enclosed design. Low headroom. Continuous duty motor with thermal overload protection for heavy duty service. Precision bearings and helical gears for long life. Only 110 volts at push button control.



Good
Suggestion
for the
Maintenance
Man!

Rugged lightweight hand
hoists and pullers...to make
your job easier and safer

CM CYCLONE HAND HOIST

$\frac{1}{2}$ to 10 ton capacities—Easy to carry and lift. One ton model weighs only 36 pounds. Made of tough aluminum alloy. Herc-Alloy load chain. High efficiency. Lifetime lubrication.

CM PULLER THE "ONE MAN GANG"

$\frac{1}{2}$ to 6 ton capacities—Lifts or pulls at any angle. Lever handle operation. Automatic load brake holds at any point. $\frac{1}{2}$ ton model weighs only 13 pounds. Herc-Alloy flexible load chain.

ALSO... CM Trolleys and Cranes

Call the CM distributor for descriptive literature, prices and fast delivery from stock.



CHISHOLM-MOORE HOIST DIVISION

COLUMBUS MCKINNON CHAIN CORPORATION

TONAWANDA, NEW YORK

REGIONAL OFFICES: NEW YORK, CHICAGO, CLEVELAND

In Canada: MCKINNON COLUMBUS CHAIN LIMITED, ST. CATHARINES, ONTARIO

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Calendar of Events

February 8-9

National Wholesale Distribution
Clinic and Exposition,
The Shoreham Hotel,
Washington, D. C.

February 15

2nd National TIPAC Forum,
Royal York Hotel,
Toronto, Canada

February 19-23

48th Annual Exhibit,
Canning Machinery & Supplies Association,
Conrad Hilton Hotel,
Chicago, Illinois

March 3

8th Quebec Regional Conference,
Packaging Association of Canada,
Sheraton-Mount Royal Hotel,
Montreal, Quebec

March 14-18

Western Industrial Exposition,
Shrine Auditorium and Exposition
Halls,
Los Angeles, California

April 6-10

World Plastics Fair & Trade Exposition,
National Guard Armory,
Exposition Park,
Los Angeles, California

April 18-21

24th National Packaging Exposition,
International Amphitheatre,
Chicago, Illinois

April 19-21

Caster & Floor Truck Mfgs. Assoc.,
Edgewater Beach Hotel,
Chicago, Illinois

May 16-20

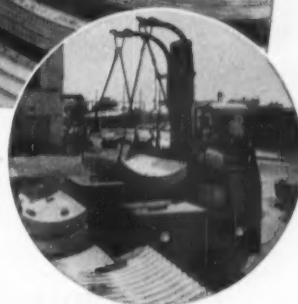
6th Annual National Material Handling Exposition,
International Amphitheatre,
Chicago, Illinois

May 19

5th Ontario Regional Conference,
Packaging Association of Canada,
Walper Hotel,
Kitchener, Ontario

June 19-July 2

Material Handling Training Conference,
Lake Placid, New York



SIDE-LOADING *Traveloader*

DOES A JOB HERE

NO OTHER HANDLING MACHINE CAN DO

Traveloader easily picks up long, awkward loads from the side and carries them securely and speedily to near or distant points—without changing travel direction. This unusual feature enabled a large mid-western steel company to set up a highly efficient system for handling and yard-storing heavy curved corrugated steel plate sections.

Unit loads weighing up to 9,000 pounds are placed on the Traveloader by overhead crane at the fabricating department, transported to storage area and tiered along 12-foot aisles. As needed, sections are picked up by the Traveloader and delivered to the shipping platform. A special attachment permits handling of single sections or "split lifts."

As a direct result of this method the company uses yard space to much better advantage, fills orders

faster and substantially reduces handling manpower.

The Traveloader also handles pipe, lumber, loads weighing over 4,000 pounds and any awkward loads. It does yard maintenance work, positions machinery and performs many other handling jobs not practical or possible with any other equipment.

Write for Bulletin 1360. It completely describes the remarkable TRAVELOADER that carries like a straddle truck, delivers like a road truck, and stacks like a fork truck. The Baker-Raulang Company, 1219 West 80th Street, Cleveland 2, Ohio.

Baker.
Industrial Trucks

Circle No. 108 on Reader Service Card for more information

NEWS VIEWS TRENDS

PACKAGING EXPO. IN CHICAGO

The 24th National Packaging Exposition, sponsored by the American Management Association, will be held April 18-21 in Chicago's International Amphitheatre. Some 30,000 business executives from all parts of the United States and a number of foreign countries are expected to attend the event. The latest in packaging equipment, materials and services for executives with products to package and ship will be on display. The AMA Packaging Conference will be held concurrently with the Exposition, and topics are expected to reflect the increasing inter-relationship of packaging and marketing and the tendency of American business to give packaging staffs representation in the highest councils of management.

AMERICAN MONORAIL BUYS LANDAHL

Purchase of Landahl Conveyor Company, Columbus, Ohio, by The American MonoRail Company, was recently announced. Landahl will be maintained as a subsidiary and continue operations in its Columbus plant. Also revealed was the formation of Canadian Mono-Rail Company, Ltd., Galt, Ontario, as a wholly owned subsidiary. The Canadian plant will fabricate the same monorail and crane units as produced in Cleveland.

REDUCED PAYMENTS FOR EMERGENCIES

A new equipment lease plan, with or without option to buy, and with as little as 10 percent down, has been announced by American Tractor Corporation. The new arrangement, featuring reduced payments during emergency periods, is believed to be the first of its kind in the equipment industry.

A SAGE MOVE

More than 30 percent of manufacturing space has been added to the plant of Sage Equipment Company, and new and larger offices are planned for the sales, engineering, purchasing and production control departments. The new plant area is equipped with the latest type of material handling equipment for fast, economical handling from receiving room to manufacturing departments, according to George Greenberger, president of the firm.

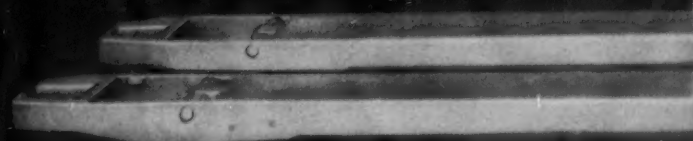
MARKET FORGE GETS A.I.M. AWARD

The Load-Mobile fork truck of Market Forge Company, Materials Handling Division, won an Associated Industries of Massachusetts merit award for new and improved product of distinction manufactured in Massachusetts during the past two years. The truck was selected from among more than 275 entries.

PLANT SHOW SUCCESS

Highlight of the Plant Maintenance and Engineering Conference, in Chicago, January 24-27, was the human relations aspect of factory upkeep. More than fifty executives from leading industries participated in discussions on the subject. Some 20,000 engineers and production executives were attracted to the Plant Show in the Amphitheatre where 10,000 items of equipment were displayed.

Saves you up to $11\frac{3}{8}"$
in aisle width



A **Master** TRUCK



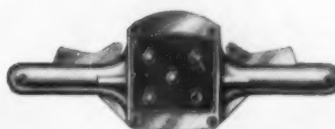
The ALL-NEW L-S Electric Pallet Truck for 3-ton loads

Now you can achieve significant savings in costly aisle space with the all-new Lewis-Shepard JackLift Electric Pallet Truck. This new "walkie" offers the shortest headroom ($25\frac{7}{8}"$) of any standard pallet truck . . . handles 48" long pallet loads in aisles only 6 feet wide. And the new JackLift is packed with power . . . handles loads weighing as much as 6000 lbs.

Here are a few of the other standout features of the new L-S JackLift Electric.

- **Exclusive** L-S handle-head controls — traction speeds and brake, forward-reverse, lift and lower, horn and key switch are within finger tip reach.
- **Exclusive** L-S safety braking—brake is on Speed-controller . . . truck operates with handle in any position including vertical.
- **Exclusive** L-S booster rollers — truck rolls into empty or loaded pallets with equal ease . . . eliminates damage to pallet loads.

SEND FOR THE FACTS about the space-saving new L-S JackLift TODAY! Mail the coupon. ➔



COMPARE CONTROLS for convenience, safety. All L-S JackLift controls are in handle-head. Brake operates with handle in any position, including vertical.



COMPARE EASE of pallet entry. L-S JackLift has 5 booster rollers . . . enters pallets smoothly, easily!



The Master Line

LEWIS-SHEPARD

132 Walnut St., Watertown 72, Mass.

Please send Catalog 35C on New L-S JackLift Electric

Name _____ Title _____

Company _____

Address _____

City _____ State _____

Circle No. 122 on Reader Service Card for more information

**A Completely New and
Different **PAYLOADER®****



**...years ahead in
design, construction
and performance !**

**the NEW
model
HA**

Thirty four years of pioneering experience by the manufacturer who has produced more complete tractor-shovel units than all others put together . . . more than three years of development and field-testing . . . this new HA model may well set new standards of mobile bulk materials handling performance for industrial operations.



...actual performance records prove amazing superiority!

carrying capacity?

TWICE AS MUCH as previous HA model; more than any other comparable size.

lifting capacity?

MORE THAN TWICE AS MUCH as previous; more than any other comparable size.

digging capacity?

MORE THAN TWICE AS MUCH as previous; more than any other comparable size.

bucket capacity?

16-2/3% INCREASE in (struck) capacity; **18 cubic feet PAYLOAD** (heaped) capacity.

dumping height?

18 PERCENT INCREASE in maximum dumping height over previous "HA" PAY-LOADER model.

turning radius?

SHORTER TURNING RADIUS than before with no increase in width, height or wheel-base.

safety features?

SETS NEW STANDARDS of safety in load carrying and driver protection.

production output?

INCREASED 50 TO 100% over previous model; more than any other comparable size.

accessibility?

IMPROVED EASE OF ACCESSIBILITY of all service points for better maintenance.

other features?

BREAKOUT BUCKET ACTION with 40° TIPBACK; sealed brakes; improved steering; new solenoid starting controls; new ignition lock; hydraulic accumulator; sealed and pressurized hydraulic tank; double-acting rams; torque converter; improved bucket construction; dustproof distributor; hose connectors; sealed grease fittings; new pin lock design; improved ground clearance; increased drawbar pull; chrome-plated piston rods; new parking brake and many others. Send for new specification catalog.



PAYLOADER®
THE FRANK G. HOUGH CO. LIBERTYVILLE, ILL.
SUBSIDIARY—INTERNATIONAL HARVESTER COMPANY



THE FRANK G. HOUGH CO.
731 SUMMITTOWN AVE. • LIBERTYVILLE, ILL.

Send me full information on the new Model HA

Name
Title
Company
Street
City State

Circle No. 12 on Reader Service Card for more information

**WAYNE CRANE
CHANGES NAME**

Wayne Crane Division of American Steel Dredge Co. Inc. on January 1 changed its name to Wayne Shovel and Crane Division. The company, which manufactures a complete line of crane-excavators and industrial yard cranes, was formed in 1941 and pioneered the self-propelled crane-excavator.

**TRACTORAMA
EXTRAVAGANZA**

Twelve 1955 models of crawler tractors, attachments and trailers will be featured in a series of Tractorama shows throughout the United States and Canada by American Tractor Corporation. To commemorate the event, the company is issuing more than 100,000 one-hundred-dollar checks, redeemable through TerraTrac dealers. The only condition is registered attendance at the show and purchase or lease of a new TerraTrac tractor within 30 days of registration date.

**S.I.P.M.H.E. PLANS
10TH ANNIVERSARY**

Detailed plans for the 10th Industrial Packaging and Material Handling Show have been released by the Society of Industrial Packaging and Material Handling Engineers. An eight-page folder which the group offers to prospective exhibitors reveals that this year's meeting will be held in Kingsbridge Armory, New York, Sept. 20, 21, 22. As in the past, it will be a three-way affair including an exposition, a packaging and material handling competition and a special short course program co-sponsored by the society and New York University.

**SCREW CONVEYOR
GOES WEST**

Screw Conveyor Corporation has acquired an industrial site at Santa Clara, California, for the ultimate purpose of manufacturing and distributing its products on the Pacific Coast. W. E. Forster has been appointed sales manager of Screw Conveyor Pacific Corporation, a wholly-owned subsidiary, and will direct the firm's activities on the west coast.

**SOUTH
INVADES
CANADA**

Rotary Lift Company, Memphis, Tennessee, has purchased Colville Industries, Ltd. of Chatham, Ontario. Facilities of the Canadian plant will be integrated into the Southern manufacturer's overall production program, according to Hugh Allan, president of Rotary. Colville was formed in 1925, and is said today to be the largest manufacturer of automobile lifts in Canada. Vice president and general manager of the Canadian plant is Chester H. Schmidt.

**RUBBER
FIRMS
MERGE**

Merger of Goodall Rubber Company and its subsidiary, Whitehead Bros. Rubber Company, became effective January 1. The two Trenton, New Jersey, firms are now known as Whitehead Rubber Division of Goodall Rubber Company.

CHAINVEYOR SOLD

United States Spring and Bumper Company has sold its Chainveyor Division to the Chainveyor Corporation. President of the new corporation is Patrick T. Rauen, former vice president of U. S. Spring and Bumper. Present sales and distributing policies will remain unchanged; however, Eastern production facilities and additional field personnel are contemplated.



*Fits places and budgets
that no other loader can!..*

Clark's new **BULK LOADER**

This little end-loader will do many of the things that bigger, more expensive machines can do—*plus a lot of things they can't do!* The Clark BULK LOADER has the shortest turning radius of any machine on the market—5'10". Within its capacity (11 cu. ft., 1200 lbs.), it's unbeatable for handling loosely packed material in cramped quarters—boxcars, narrow aisles, close approaches to hoppers. There's plenty of power, plenty of traction for light shoveling, with speeds up to 8½ mph in both directions. Fully loaded, the BULK LOADER will climb a 14% grade.

Bucket action is also outstanding. Low-level independent tilt-back guarantees full bucket loads every time, permits carrying in lowered position without spillage. The 60 degree dumping action has a full 76 in. clearance under the hinge, 47 in. under the lip.

Compare the performance of this new BULK LOADER against competitive machines. And remember that you'll have no service problems with this new Clark machine—parts and components are mainly interchangeable with the standard Yardlift-20. Service is immediately available from your local Clark dealer, listed in the Yellow Pages under "Trucks, Industrial."



Ask your Clark dealer for a demonstration of the new Bulk Loader. Send the coupon and we'll make the arrangements.

**CLARK
EQUIPMENT**

Industrial Truck Division
Battle Creek 13, Michigan

- ☐ Send details on the BULK LOADER
☐ Contact me for demonstration

Name _____
Firm _____
Address _____
City _____

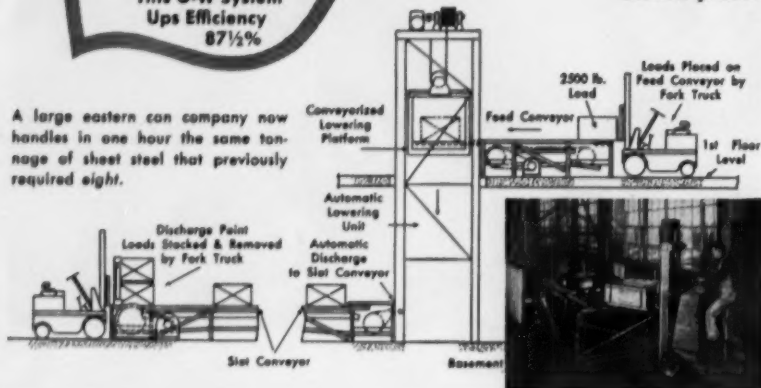
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"Inter-Floor Handling? check Gifford-Wood"

That's right...no need to let your plant operations bog down because of knotty inter-floor handling problems. Over the years, G-W engineers have successfully met the varied requirements for handling many different items in dozens of different industries. And while G-W doesn't have the answer to your problem, per se, they have what is more important—the background of proven accomplishment. Here's proof...

**This G-W System
Ups Efficiency
87½%**

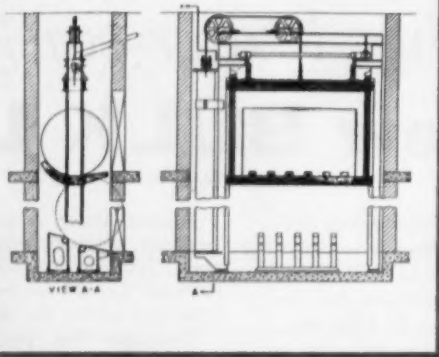
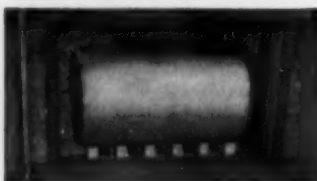
A large eastern can company now handles in one hour the same tonnage of sheet steel that previously required eight.



**This G-W System
Saves \$25,000.00
Annually**

**This G-W System Saves
Costly Plant Space in
Metropolitan New York**

A big New York daily newspaper saves valuable space, handles ¼ T. newsprint rolls faster, easier, more safely with this G-W Pneumatic Drop.



GIFFORD-WOOD CO.
Since 1814 • Hudson, N. Y.

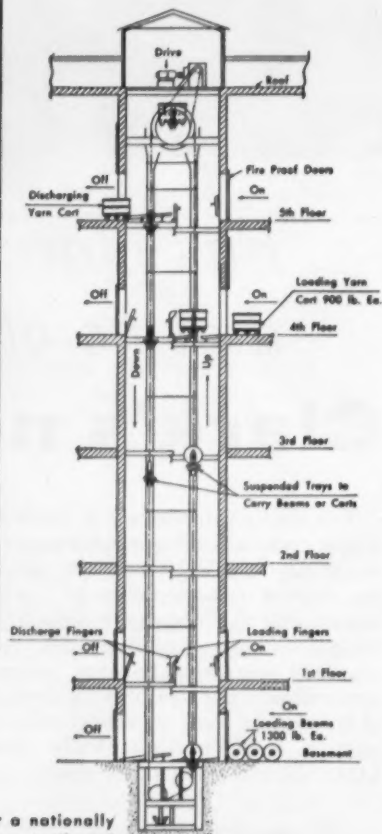
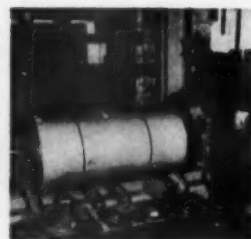


FREE 32 PAGE CATALOG
of engineered materials handling installations
GIFFORD-WOOD CO., Hudson, N. Y.

- Please send me:
- ☐ Complete information on the inter-floor handling system described above.
 - ☐ My free copy of your Catalog 400 describing G-W installations.

Name _____ Company _____
Address _____
City _____ Zone _____ State _____

For a nationally known textile and rubber company this system handles heavy rayon beams and box trucks safely, with less muscle work, through six stories, automatically loading and discharging.



Circle No. 143 on Reader Service Card for more information

NOW
available



Clark's HYDRATORK DRIVE CARLOADER

The revolutionary HYDRATORK DRIVE lift truck is now available in Clark's 3000-5000 lb. Carloader. The new clutchless, torque converter transmission has already won many friends among users of Clark's 6000-7000 lb. Utilitrucs. The basic benefits of this Clark-built transmission are:

1. **Lower cost:** no gear clash, no clutch problems, excellent serviceability.
2. **More power:** faster, smoother get-away, better gradability.
3. **Less driver fatigue:** finger-tip direction control, no clutching or shifting.

Send for FREE Booklet

The free booklet shows detailed disassembled views of the HYDRATORK DRIVE, explains how it works. Clip the coupon to your company letter-head and we'll send it to you.

**CLARK
EQUIPMENT**

Industrial Truck Division
CLARK EQUIPMENT COMPANY
Belle Creek 13, Michigan

☐ Send HYDRATORK DRIVE booklet

Name _____

Firm _____

Address _____

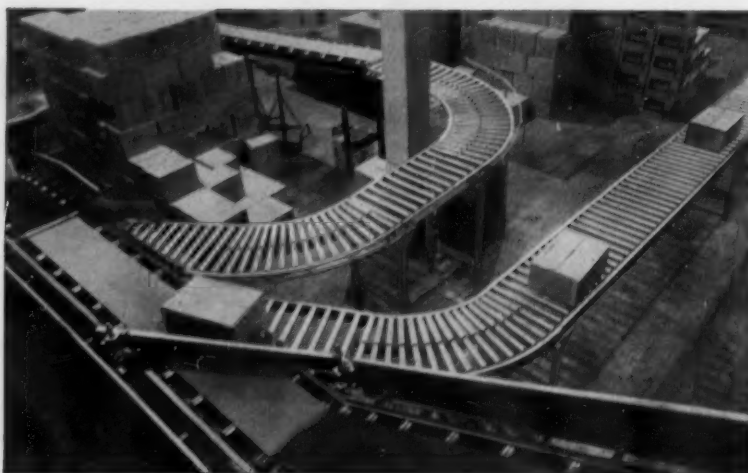
City _____ Zone _____ State _____



"doodles" or complete plans?



Whichever you have
Standard's complete conveyor service
can save you money!



Many a complex conveying problem has been solved by Standard engineers with only a customer's "doodle" drawing to follow. And often when complete plans are submitted, Standard engineers make recommendations that improve the conveyor application . . . save time and money as well.

If you prefer to do your own conveyor planning, we suggest you send for Bulletin 63-D. Here in 28 fast-reading pages you get all the specifications, drawing and application data on a wide range of Standard Conveyors. This includes gravity and power conveyors and accessory equipment: Handidrive pre-built conveyor units and the complete, self-contained portable conveyor units listed below.

Call your Standard Conveyor representative listed in your classified phone book — or send for copy of Standard General Catalog — address Dept. FL-25.

STANDARD CONVEYOR COMPANY

General Offices: North St. Paul 9, Minnesota
Sales and Service in Principal Cities



GRAVITY & POWER Conveyors

ROLLER • SLAT • WHEEL
SECTIONAL • BELT • CHAIN • PUSH-BAR

PORTABLE CONVEYOR UNITS:

HANDBELT • INCLINEBELT • EXTENDOVEYOR • UTILITY BELT-VEYOR
HANDIPILER • LEVEL BELT • LITWATE • HANDIDRIVE
PNEUMATIC TUBE SYSTEMS

Circle No. 45 on Reader Service Card for more information

HIGHLIGHTS of the month's NEWS

LEASING plans for industrial trucks have, in recent months, been made available by more and more manufacturers. And, the effect of these plans is aptly summed up by Sheldon K. Towson, president and general manager of The Elwell-Parker Electric Company, who says, "The impact of the industrial truck on American industry will be further amplified this year by the host of new leasing and time payment plans now being offered by industrial truck manufacturers."

"Such plans will place the modern industrial truck within easy reach of almost any firm. Although many different plans are being offered, principal differences are in terminology and minor variations in interest rates."

"The primary reasons for leasing are: one, to release working capital for more profitable use by a company; two, to provide an opportunity for a firm to buy such equipment where working capital is limited; three, to follow certain tax advantages."

Regarding these tax advantages, Towson points out there has been some public misconception about them. "Leasing does not permit actual tax savings," he says. "It merely permits faster write-off than would normally be allowed under normal government depreciation rates. The net result is that tax deductions are recovered sooner; hence the money can be used advantageously in other phases of a business."

Towson also forecasts an improvement in both volume and profits for business this year, calling attention to the very fact that business conditions in many parts of the country were somewhat less than satisfactory last year assures that alert management will seek every possible means to reduce operating costs and increase profits.

ONLY CLARK ELECTRICS

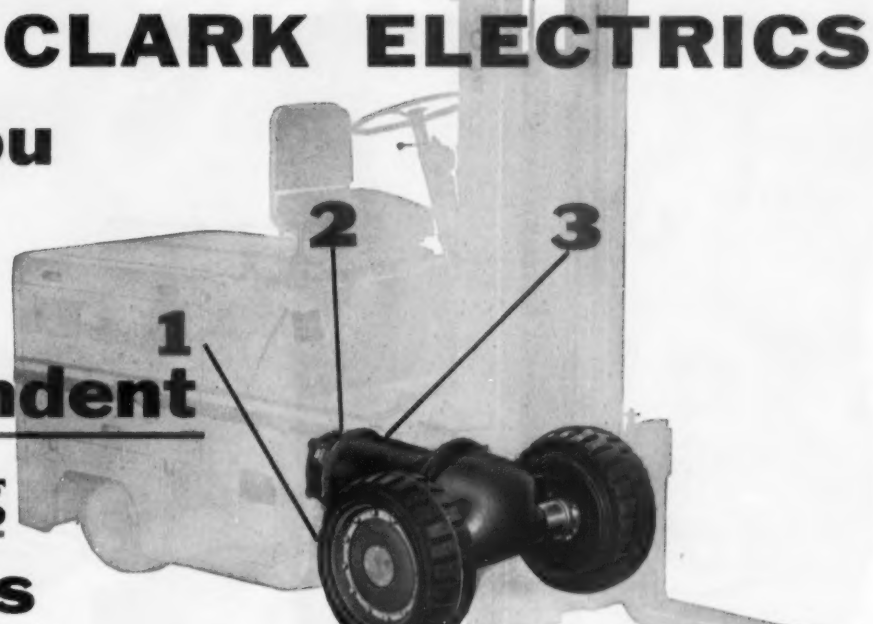
give you

3

independent

braking

systems



ANOTHER REASON WHY YOU
GET MORE FOR YOUR MONEY WITH CLARK...

1 Hydraulic service brakes on the drive

wheels: by incorporating the internal expanding double-shoe design with large braking surface, positive control of the truck at all times is assured for even the severest service requirement.

2 "Dead-man" brake on the armature

shaft: this positive acting brake takes hold automatically the instant that the driver leaves the truck—disconnects the power, returns all controls to neutral, assures that the truck will remain stationary.

3 Dynamic braking by reversing current

through the drive motor: this braking method permits smooth deceleration, with no grabbing; but positive automatic control eliminates all danger of damage to electrical motors and controls.

This three-way braking system is another exclusive feature of Clark electric fork trucks—the safest electric trucks on the market. It's another good reason for talking to your local CLARK dealer (see the Yellow Pages of your phone book) when you're in the market for electric fork trucks.

And remember: Only Clark has no axe to grind for any particular type of truck. We produce them all: gas, electric, diesel and L.P.G. fork trucks; POWERWORKER hand trucks; ROSS Carriers. For unbiased experienced counsel, see your Clark dealer today.

WRITE FOR FREE BOOKLET DESCRIBING THE FEATURES AND

ADVANTAGES OF CLARK ELECTRIC FORK TRUCKS

**CLARK
EQUIPMENT**

Industrial Truck Division
CLARK EQUIPMENT COMPANY
BATTLE CREEK 13, MICHIGAN

Circle No. 28 on Reader Service Card for more information



Increase the Efficiency of Your Materials Handling Vehicles

Profit by dispatcher-to-operator control using Motorola 2-way radio. Now successfully applied in *all* types of plant and yard operations . . . wherever the efficient movement of materials is important . . . straddle trucks, loaders, cranes, tractors, fork lift trucks and switch engines are delivering greater pay loads at lower cost than was possible before Motorola radio was installed. Experience proves that Motorola radio pays a quick bonus.

There's a skilled Motorola communication engineer in your vicinity, at your call at all times to help you and your staff plan, install, and profitably operate your own Motorola radio dispatching system — and remember with Motorola you have the backing of the largest exclusive electronics manufacturer and radio service organization.

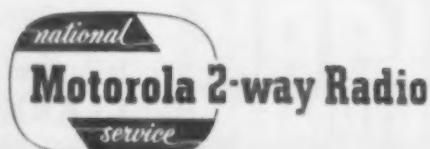


Uni-Channel Sensicon Mobile Unit designed for space-saving compactness.

MOTOROLA COMMUNICATIONS & ELECTRONICS, INC.

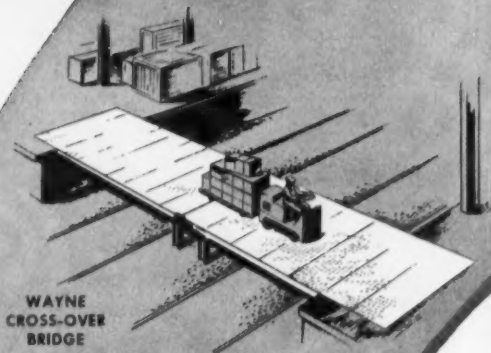
A SUBSIDIARY OF MOTOROLA, INC.

4501 W. Augusta, Chicago 51, Ill. • Rogers Majestic Electronics Ltd., Toronto, Canada

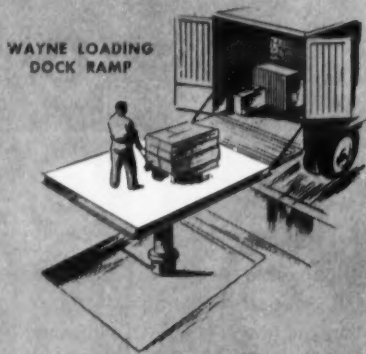


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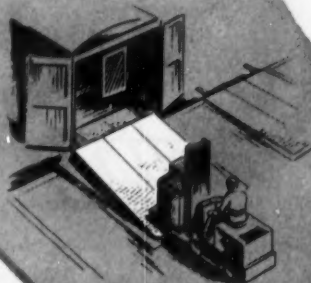
CUT THE *HANDLING* IN MATERIALS HANDLING WITH



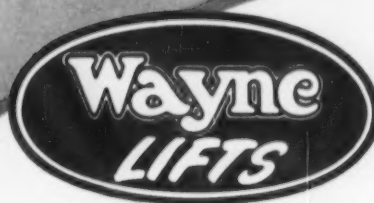
WAYNE
CROSS-OVER
BRIDGE



WAYNE LOADING
DOCK RAMP



WAYNE
MATERIALS LIFT



BOOST PRODUCTIVE MAN HOURS SAVE TIME, LABOR, DOLLARS

Simplify materials handling! Eliminate unnecessary "run-around hauls," loading and re-loading . . . install Wayne's System of LIFTronics.

WAYNE CROSS-OVER BRIDGES reduce costly and wasteful hauling, speed traffic and do away with the need for ramps between buildings. Available to suit every need and location—single and double bascule, turntable and straight lift platforms.

WAYNE PLATFORM LIFTS speed loading where no dock is available, simplify inventory stocking, expedite all elevator type operations. Can be adapted to unusual handling problems—lifting large rolls of paper in printing plant, feeder on machines, etc. Available in single and double post types made to fit your exact specifications.

WAYNE LOADING DOCK RAMPS have proved they can cut loading time by as much as 75%. Loading or unloading, just back up the truck, push the button and the Wayne Loading Dock Ramp is adjusted to correct height. Factory trucks can roll on or off easily.

Answer your materials handling problems with Wayne LIFTronics. Write for the new book on materials handling giving engineering data, installation photos, etc.



THE WAYNE PUMP COMPANY

Industrial Products Division FORT WAYNE, INDIANA

SALISBURY, MARYLAND • TORONTO, CANADA

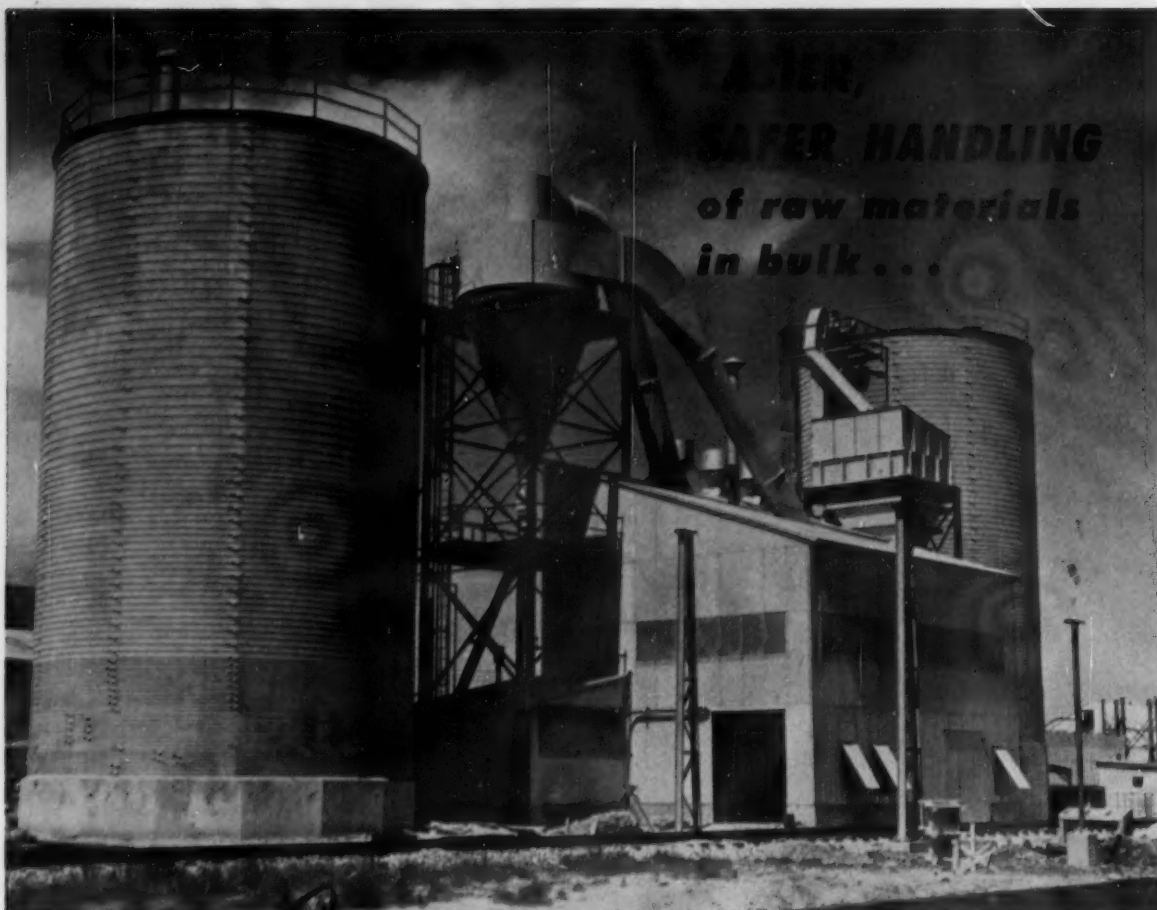


COMPRESSORS

HOSE
REELS

LUBRICANT
DISPENSERS

INDUSTRIAL
PUMPS



**ASER,
SAFER HANDLING
of raw materials
in bulk . . .**

Efficient handling of bulk materials is provided by this Marietta designed and erected storage system at Texas City Chemical Co., Texas City, Texas.

Marietta

GREATEST NAME IN SILOS

Stockpiling of raw materials is essential, but storing materials in outmoded or limited-capacity storage systems is a sure, quick path to raising handling costs. Modern Marietta storage systems are versatile. They are designed to help you make more profit by providing more efficient methods of handling materials . . . readily adaptable to every industrial storage need.

Single or multiple Marietta concrete storage silos

are in use today by many industries for storage of widely varied materials. Marietta precast solid or Air-Cell concrete stave construction is sturdy . . . durable . . . stressed to carry heavy top or side-mounted machinery of any type needed for your operations. Built to stay "bone dry," they eliminate waste and spoilage . . . keep even the most hygroscopic materials in usable condition.



MARIETTA AIR-CELL lightweight aggregate STAVES

Stronger . . . thicker than standard staves . . . an exclusive Marietta development. Give greater protection especially when dry materials are stored.

Marietta precast Air-Cell staves, made from lightweight aggregate, are 3 1/4" thick and provide insulation value equal to 15" of solid concrete.

THE

Marietta

CONCRETE CORPORATION
MARIETTA, OHIO

BRANCH
OFFICES:

- 501 FIFTH AVE., NEW YORK 17, N. Y.
- PULASKI HWY. AT RACE RD., BALTIMORE 21, MD.
- BOX 5192, CHARLOTTE 6, N. C.
- 411 FOSTER ST., NASHVILLE, TENN.
- HOLLYWOOD, FLA. • JAMESTOWN, N. Y.

Representatives in Principal Cities

PRECAST CONCRETE PRODUCTS FOR FARM, HOME AND INDUSTRY

Circle No. 9 on Reader Service Card for more information

NEW ... PUSH-BUTTON PENDANT CONTROL

SAVES TIME and EFFORT



ARO

Variable Speed

AIR HOIST

Choice of Controls ... New Pendant, push-button, instant stop or start, up or down ... also, double cable control.

Variable Speed ... 1000 lbs., 0 to 38' per minute ... quieter ... no spark hazard ... explosion-proof motor.

AIR-powered for Safety ... can't burn out ... can't overheat ... permits continuous use ... unaffected by dust or fumes.

Lightweight ... only 28 1/2 lbs.—overall length, 10 1/2".

SEE YOUR ARO DISTRIBUTOR

THE ARO EQUIPMENT CORPORATION
Bryan and Cleveland, Ohio

Aro Equipment of California, Los Angeles, Calif.
Aro Equipment of Canada, Ltd., Toronto 1, Ontario

Offices in All Principal Cities



AIR HOIST

Also ... Air Tools ... Lubricating
Equipment ... Aircraft Products

... Grease Fittings



The **MOST COMPACT** and **MANEUVERABLE** 5,000 pound Fork Lift Truck ever made!

Here, in the new Model 500, are the performance features you requested . . . NEW compactness and maneuverability previously found only in much smaller units. NEW power to spare for handling up to 2½-ton loads. NEW day-long efficiency under the most severe working conditions from both gasoline and Diesel models.

Here are versatile power, capacity and performance long needed in a compact, maneuverable fork lift truck. Find out how the new Towmotor Model 500 fork lift truck can meet *your* handling requirements . . . and turn *more* of your present handling costs into profit. For complete information, call or write your local Towmotor Representative, or TOWMOTOR CORPORATION, Div. 802, 1226 E. 152nd St., Cleveland 10, Ohio.

TOWMOTOR THE ONE-MAN-GANG

**FORK LIFT
TRUCKS
and TRACTORS**

- ★ NEW Power and Compactness
- ★ NEW High In Maneuverability
- ★ NEW Handling Speed And Efficiency
- ★ NEW Driver Comfort
- ★ PLUS All Other TOWMOTOR Advantages

Manufactured Only By Towmotor Corporation—The Pioneer Maker Of Fork Lift Trucks
Circle No. 106 on Reader Service Card for more information



. . . at Butler Manufacturing Co.

Directors have named **John A. Morgan** to the newly created post of executive vice president and elected **Walter L. Smith** vice president of engineering



W. L. Smith



J. A. Morgan

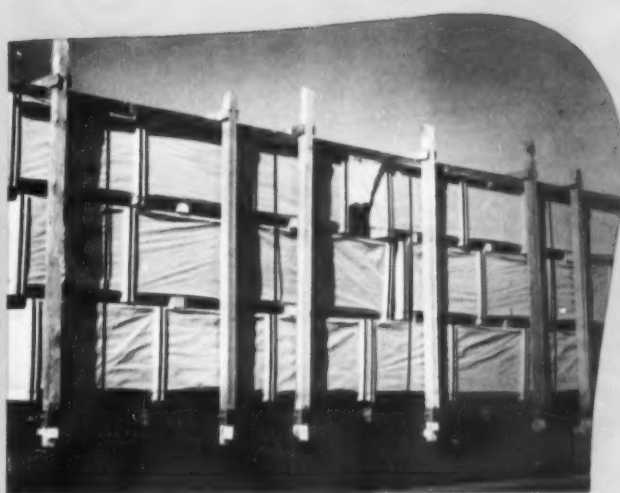
and production. Morgan has served the company for 15 years, most recently in the capacity of general manager. Smith joined Butler in 1934, and was appointed chief production manager in 1947.

. . . at Elwell-Parker Electric Co.

Chief engineer is **J. A. Ackermann**, a veteran of 31 years' service with the company. He has contributed much to the industrial truck field, having participated in the design of the industry's early fork trucks, the first heavy-duty ram trucks used by the steel industry, and the first rotary roll paper clamp.

. . . at B. F. Goodrich Co.

Vice president **J. Ward Keener** has accepted an invitation to serve on an advisory committee to the Army on its world-wide civilian personnel management program. Keener will be one of six of the nation's leading industrial relations executives to



AIM* to speed carloading ...insure safe transit



Acme Steel Strapping *ideas in action* quickly demonstrate here what thousands of manufacturers are doing now to protect merchandise in transit. The rest of the story is told by the customer at the other end of the line who gets his shipments damage-free.

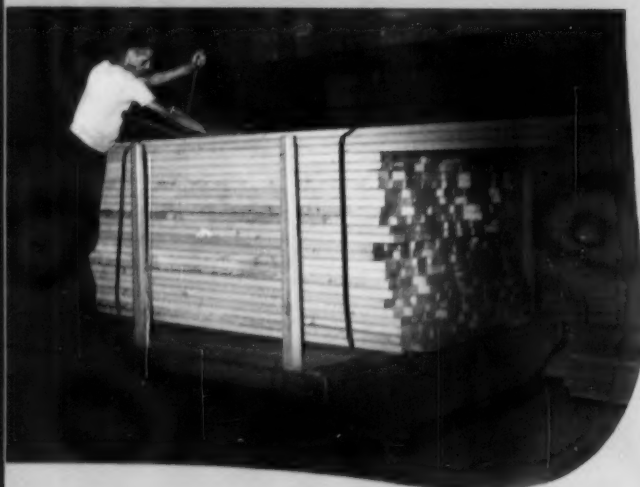
Regardless of how your product is shipped—skid, pallet, bundle, carload or carton—your *Acme Idea Man can show you how to use Acme Steel Strapping, Tools or Wire Stitching equipment effectively and economically. Get for yourself the multiple benefits of Acme Steel products and experience in packaging and shipping.

It will pay you to use the coupon on the reverse side . . . or call the nearest Acme Steel office for the services of an Acme Idea Man.

ACME STEEL PRODUCTS DIVISION—ACME STEEL COMPANY
2840 Archer Avenue, Chicago 8, Illinois

ask your *Acme Idea Man to help solve your problems





ABOVE: Acme Steel Silverstitcher closes and protects carton and contents. Ask your Acme Idea Man about new "Arcuate" Wire Stitching methods.

BELOW: Lumber is bundled and protected for easy, safe delivery. Your Acme Idea Man can recommend correct tools and steel strap sizes for any product handling.

ask your **Acme Idea Man** to apply ideas like these to your shipping problems

- Idea #417**—Unitizing heavy, shaped timbers
- Idea #127**—Carloading mixed shipment of kegs and cases of beer
- Idea #403**—Assembling and stitching various size cartons
- Idea #125**—Reinforcement of crates for five-gallon water bottles
- Idea #129**—Skid loading printed material
- Idea #416**—Protection-line strapping of cartons
- Idea #123**—Self-palletizing unit of concrete block
- Idea #111**—Bundling refractory brick for palletless shipment
- Idea #409**—Strapping concrete pipe on flatcars
- Idea #112**—Strapping foundry flasks into bundles
- Idea #418**—Wire stitching of fibreboard tote boxes
- Idea #402**—Strapping rolls of tire cord fabric for overseas shipping
- Idea #110**—Strapping rubber onto skids, into palletless units, and carloads
- Idea #109**—Bundling and truck loading beehives
- Idea #133**—Tying protective wrappings to oxygen cylinders
- Idea #408**—Packaging of impregnated pipe
- Idea #107**—Carload bracing coiled copper rod
- Idea #106**—Skid loading cellophane rolls in cartons
- Idea #111**—Bundling solid fibre newsprint cores
- Idea #105**—Palletizing and carload bracing multi-packs of television tubes
- Idea #401**—Unitizing lumber for retail delivery
- Idea #415**—Strapping formed, wood pipe staves in carload shipments
- Idea #104**—Palletizing and carloading wax slabs

SEND FOR THESE VALUABLE CATALOGS

on Acme Steel Strapping, Strapping Tools and Wire Stitching equipment. Get the full story on packaging and shipping. Use the coupon below.

ACME STEEL PRODUCTS DIVISION, Dept. LM-25

Acme Steel Company
2840 Archer Avenue, Chicago 8, Illinois

Please send me further information on Acme Steel's Safe, Lower-Cost Shipping Methods. I am interested in ☐ Steel Strapping; ☐ Wire Stitching; ☐ having an Acme Idea Man call on me.

Name _____ Title _____

Company _____

Address _____

City _____ Zone _____ State _____



mail this
coupon today!

ACME STEEL CO.
CHICAGO

**ACME
STEEL**

HYDRAULICS FOR
MOBILE EQUIPMENT

VOL. 2

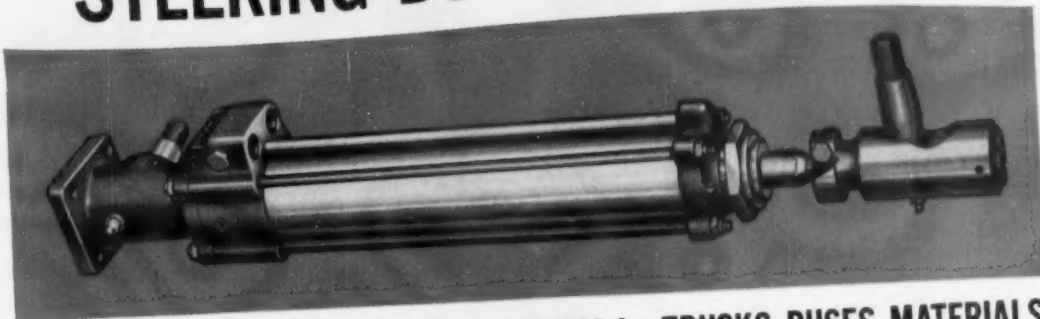
Mobile Equipment News

VICKERS INCORPORATED, DETROIT, MICHIGAN

IMPROVES
PERFORMANCE
• CUTS COSTS

MO. 5

New! **VICKERS** HYDRAULIC POWER STEERING BOOSTER...SERIES S23



LATEST DEVELOPMENT in POWER STEERING for TRUCKS, BUSES, MATERIALS HANDLING VEHICLES, ROAD CONSTRUCTION and MINING MACHINERY

More compact . . . improved in operating characteristics . . . this new Vickers Steering Booster, Series S23 is an important new development in power steering for many vehicles. Application is much easier because it requires less space . . . and ultimate costs are substantially lower. Series S23 thus opens the way to fingertip ease of steering for a wide range of additional vehicles.

Like the preceding models, Series S23 has hydraulic lock against road shock. Bumps, chuckholes, blown front tires, obstructions, etc., cannot spin the steering wheel or jerk it out of control. This is a safety factor of great importance.

Series S23 Boosters are provided either with (Model S23R) or without (Model S23N) an integral relief valve. Model S23N is used with Vickers VT16 and VT17 pumps that have integral volume control and relief valve. When the larger volume Series V200 pump is used and a volume control is required in the circuit, the S23N is used with a separate combination valve (see Series FM2 below). Model S23R is used with the Series V200 pumps that

have no integral valving, for applications where a volume control is not required.

MORE VERSATILE INSTALLATION

In Series S23 Boosters, the servo ball stud housing is symmetrical, and can be assembled in any one of four positions. This and the compactness of the Booster makes application easier . . . increases the number of applications which can be made without major engineering changes. Series S23 Boosters can be mounted interchangeably with Models S6-277 and S6-279 Boosters.

REQUIRES LESS SPACE

The new booster has been reduced in size by the redesign of the servo control valve. The tube connecting the servo valve to the rod end has been relocated and is now on the same side as the fitting connection. As a result of these changes, Series S23 requires less space . . . works in closer quarters.

7062

ASK FOR NEW BULLETIN M5106

VICKERS Incorporated

DIVISION OF THE SPERRY CORPORATION

1538 OAKMAN BLVD. • DETROIT 32, MICH.

Application Engineering Offices: ATLANTA • CHICAGO AREA (Brookfield) CINCINNATI • CLEVELAND • DETROIT • HOUSTON • LOS ANGELES AREA (El Segundo) • MINNEAPOLIS NEW YORK AREA (Summit, N. J.) • PHILADELPHIA AREA (Media) • PITTSBURGH AREA (Mt. Lebanon) • ROCHESTER ROCKFORD • SAN FRANCISCO AREA (Berkeley) • SEATTLE ST. LOUIS • TULSA • WASHINGTON • WORCESTER

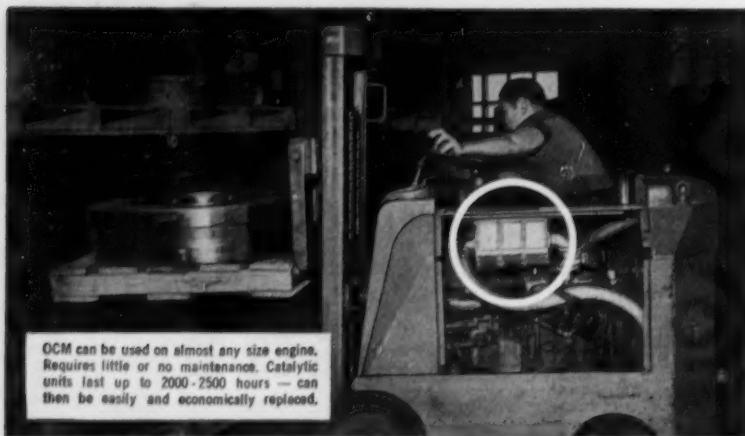


VICKERS VOLUME CONTROL and OVERLOAD RELIEF VALVE

Five sizes of Series FM2 Valves were developed primarily for hydraulic power steering on trucks, buses and materials handling equipment where the pump does not include a volume control valve. The FM2 improves steering booster performance by providing a relatively constant volume of oil regardless of engine speed variations. An integral relief valve is included.

ENGINEERS AND BUILDERS OF OIL HYDRAULIC EQUIPMENT SINCE 1921

Circle No. 146 on Reader Service Card for more information



OCM can be used on almost any size engine. Requires little or no maintenance. Catalytic units last up to 2000-2500 hours — can then be easily and economically replaced.

KILLS DANGEROUS HYDROCARBONS AND CO FUMES FROM GASOLINE AND LP-POWERED EQUIPMENT OCM CATALYTIC EXHAUST

Now you can operate lift trucks, bulk handling trucks, stationary engines — any type of gasoline- or LP gas-powered equipment — efficiently, safely, in even closely confined areas. For the OCM Catalytic Exhaust eliminates 95% or more of the deadly carbon monoxide, and 90% of the hydrocarbons, from the exhaust gases.

The OCM Catalytic Exhaust is made to replace standard engine mufflers. It's now available as optional factory-installed equipment from leading manufacturers, such as Buda, Clark, Yale & Towne, and Lincoln-Schlueter. Or it can be easily installed on present equipment by your own mechanics.

Wherever you operate gasoline- or LP gas-powered engines indoors — even part time — the OCM Catalytic Exhaust means an end to fume-caused headaches, eye irritation, and nausea. It means more efficient use of equipment, plus greater employee productivity and morale. Write now for complete information and the name of your nearest supplier.

OXY-CATALYST, INC.

WAYNE, PA., U.S.A.

MANUFACTURING • ENGINEERING • RESEARCH

Fume elimination processes and equipment for internal combustion engines — for incinerators — for consumer products — and for industrial air pollution control and heat recovery.

OXY-CATALYST, INC., Wayne 1, Pa.

Please send complete information on

- ☐ OCM Exhaust for gasoline engines
- ☐ OCM Dieseler for 4-cycle diesel engines
- ☐ Send name of nearest supplier

Name

Firm

Street

City

Zone

State

Circle No. 49 on Reader Service Card for more information



FOR FORK TRUCKS



STATIONARY ENGINES



POWER SWEEPERS

For Diesel Exhaust Fumes New OCM Dieseler reduces below objectionable levels harmful, irritating exhausts from any 4-cycle diesel engine when running at or over 60% load. Write for details.



Inquirers in the U.S.A. or its territories, or in Canada, should write to Wayne, Pa. Inquirers elsewhere should write to Pan American Chemical Inc., 9 Rue La Perouse, Paris 16, France.

MEN IN THE NEWS

Continued

serve on the committee, which will report directly to assistant secretary of the army Hugh M. Milton II.

... at Clark Equipment Co.

Russell Hastings, Jr. has been appointed chief engineer of the Industrial Truck Division. A graduate of M.I.T., Hastings joined Clark two years ago as assistant chief engineer after 18 years with the Lewis-Shepard Company. He replaces A. O. Williams, who has retired. Paul McAdams and Walter Ross, Jr. have been appointed to the engineering staff of the Construction Machinery Division. Both men are development engineers.



R. L. Hastings

... at The Colson Corporation

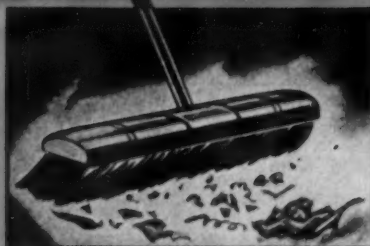
W. C. Shea was appointed manager of institutional sales and T. J. Bromeling was named manager of industrial sales. They will report directly to Edward C. Hamm, vice president and director of sales.

... at The Thew Shovel Co.

Recently appointed assistant to the general manager is E. C. Brekelbaum, who will have general authority on matters pertaining to methods, engineering and quality control. Brekelbaum joined the company in 1952 as director of methods after 17 years of association with Harnischfegar Corporation.

... at Stewart-Warner Corp.

Newly elected vice president is Alexander Kidd, who will be responsible for assisting oper-



This broom is costing you money!

NEW WAYNE INDUSTRIAL SWEEPERS

Reduce Plant Sweeping Costs over 75%!



OUTLASTS, OUTPERFORMS ANY OTHER MECHANICAL SWEEPER

Engineered to principles test-proved by Wayne Street Sweepers in heavy duty operation throughout the world.

4 NEW MODELS
TO FIT THE JOB!

**If you spend \$50 per week for push broom sweeping,
the Wayne will pay for itself in six months.**

**If you spend \$200 per week, the Wayne
will pay for itself in six weeks!**

THE NET RESULTS:

- 1) A dollar saving more than the original cost of the Wayne.
- 2) Over 75% reduction in plant sweeping costs.
- 3) A far more efficient and thorough plant sweeping system.
- 4) Release of manpower for additional maintenance work.

Wayne's Superior Engineering Features Reduce Operating Costs, Increase Sweeping Efficiency.

- Sweeps over 100,000 sq. feet per hour • Hydraulic Dumping saves time and work • Rugged construction, simplified design reduces maintenance • 20-Inch Curb Broom sweeps closer to walls and machinery
- Maneuverability, turns in own length • "Filter-Vac" Dust Control, keeps air clean • Largest Hopper Capacity

WAYNE

Write for new descriptive "Line Folder"

Wayne Manufacturing Co., Dept. F2
120 E. Lexington St.
Pomona, California

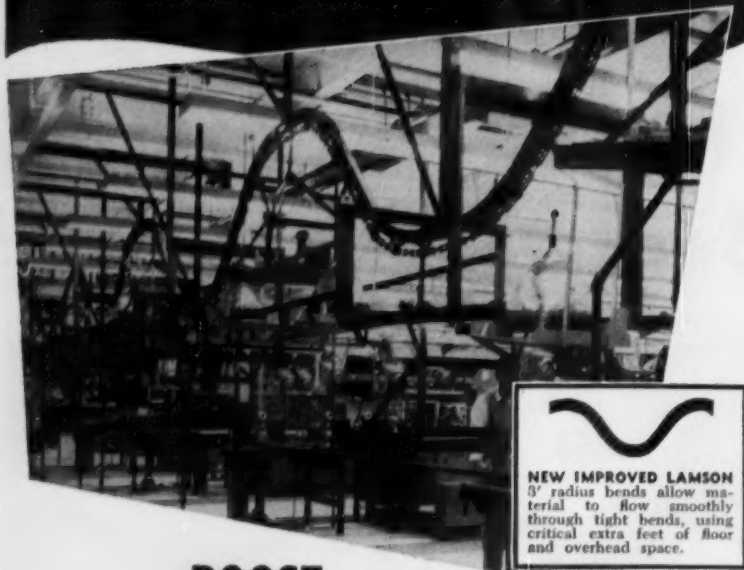
Please send new Line Folder on Wayne Industrial Sweepers to:

Name _____
Company _____
Address _____
City _____ Zone _____ State _____

World's leading maker of mechanical sweepers for cities and industrial plants.

DEALER INQUIRIES INVITED

3 Foot Radius Bends...



...BOOST PRODUCTION LINE EFFICIENCY

At its new TV receiver assembly plant at Batavia, N. Y., Sylvania Electric has brought assembly lines closer together . . . increased workable floor space . . . and has also put "waste" overhead space to use.

An unusual Lamson-designed overhead conveyor system combines the strength and durability of a 3" I-beam system with the flexibility of a lightweight overhead system. . . and offered at a competitive price.

This system is also effective for dip-tank and de-greasing. Short radii bends minimize the size and contents of tanks. Loads up to 100 lbs. can enter and leave in a shorter horizontal run.

For a free copy of "Utilize The Air Rights Of Your Ceilings" which gives full details on Lamson-engineered systems . . . and how they can increase your production efficiency . . .
MAIL THIS COUPON TODAY.

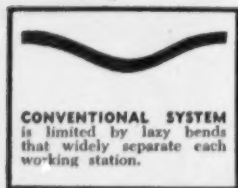
LAMSON

Plants in Syracuse
and San Francisco
Offices in Principal
Cities

Lamson Corporation
2242 Lamson Street, Syracuse 1, N. Y.
Please send me a free copy of "Utilize The Air Rights Of Your Ceilings" which gives full details on Lamson-engineered systems.
NAME _____ TITLE _____
COMPANY _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____



NEW IMPROVED LAMSON
3' radius bends allow material to flow smoothly through tight bends, using critical extra feet of floor and overhead space.



CONVENTIONAL SYSTEM
is limited by lazy bends that widely separate each working station.

MEN IN THE NEWS

Continued

ating managements of the six divisions. Kidd was formerly a vice president of The M. W. Kellogg Company, with whom he was associated for 34 years.

. . . at Acme Steel Company

Appointment of **James E. Borendame** to the newly created position of director of marketing services was announced.



He will be responsible for **J. E. Borendame** coordinating the company-wide functions of advertising, sales promotion, publicity, public relations, market research, sales analysis and sales training. Borendame was previously manager of sales promotion.

. . . at Loudon Machinery Co.

Gerald W. Yeager was appointed treasurer and elected to the board of directors. He succeeds **A. E. Labagh**, who is retiring after 41 years of service with the company.

. . . at Motorola

Dr. William Firestone was appointed to the newly created position of assistant chief engineer of the research department of the Communications and Electronics Division.

. . . at Timken Roller Bearing Co.

Appointment of **Richard L. Frederick** as director of industrial relations was announced by vice president **A. M. Donze**. He will be succeeded as superintendent of labor relations by **N. N. Case**. **John T. Bonnot** will serve as assistant to Case.

Circle No. 102 on Reader Service Card for more information

... at Federal Pacific Electric Co.

Stockholders re-elected Louis W. Cole chairman of the board of directors, and also returned all other directors to office.

... at Wisconsin Motor Corp.

After 45 years of continuous service, A. F. Milbrath, chief engineer and vice president has retired at the age of 74. Long recognized as one of the nation's leading designers of internal combustion engines, Milbrath's colorful and fruitful career as an engine designer parallels the phenomenal growth of the Internal Combustion Engine Industry. A "Facts for Industry" report of the U. S. Census Bureau released in July indicates that more than 50 percent of all engines manufactured during 1953 in the 11 to 176 cubic inch displacement bracket were Milbrath-designed "Wisconsin's".

... at Robert Gair Co., Inc.

Manager of the Pennsylvania Corrugated Box Division in Philadelphia is Frank E. Newton, who replaces Harry J. McPhillamy now assistant division manager.

... at Clark Equipment Co.

Appointments of Lowell Conrad as director of engineering and Raymond H. Bowman as chief engineer of the Construction Machinery Division have been announced.

... at Baughman Manufacturing Co.

Former parts manager William D. Baker has been named purchasing agent.

... at Acme Steel Company

Sales manager of the Special Products Division is Walter S. Snodell, Jr. He succeeds W. M. Minehart who is retiring after 38 years of service.



Loading a freight car, top of Mobilift remains stable with 1 rear wheel raised. Power wheels maintain full traction on floor plates.



load "still on the level"

MOBILIFT® with HYDRALIZER

You can pile 'em high and move 'em fast . . . in a smoothly carried load on a Mobilift with Hydralizer. Hydralizer replaces conventional pivoted axle with simple, positive hydraulic suspension which automatically compensates for variation in floor surface up to 3 inches. Absorbs all shock . . . protects load and truck from shock damage. Truck stays level. Power wheels get top traction. They're always on the ground. Drivers do more with less fatigue.

Plus These Mobilift Features • • • ▶

- Mobilmatic Transmission Assembly
- No Clutch Pedal
- Capacities From 3000 to 4000 lbs.
- Ball-Bearing Worm
- Nut-Type Steering
- 1-Piece Hood
- Easy Engine Access

For complete details on this new line of Mobilift sit-down and stand-up fork lift trucks, MAIL THIS COUPON TODAY. ➔

LAMSON MOBILIFT CORP.
5002 Lamson Street, Syracuse 1, N. Y.
Please send me complete information on _____ 3000 lb. capacity unit Model M-3000; _____ 4000 lb. capacity unit Model D-4000; _____ all Mobilift units to:
NAME _____ TITLE _____
COMPANY _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____



MOBILIFT CORP.
Home Office
Portland, Ore.
Offices in principal cities

Circle No. 132 on Reader Service Card for more information



Fork truck with built-in lasso ... for cowboy drivers

● Over-enthusiastic truck jockeys can't hurt Baker Fork Trucks or loads carried (or themselves) by jumping from "low" to "high" or forward to reverse.

Baker drum-type controllers take motor speed in successive steps through acceleration stages, no matter how "heavy" the foot on the accelerator.

Jack-rabbit starts, with resulting motor burn-outs, are impossible. Dynamic braking slows truck to a smooth stop, sparing driver and load, and acts as auxiliary brake on steep grades.

Motor strain or jolt from sudden direction

changes is prevented by requiring truck to come to a virtual stop before reversing circuit applies.

All this adds up to safer operation for driver, truck and load, less down time, lower repair bills and longer truck life.

For more detailed information on Baker Fork Truck features, write for 4-color sketch book—Bulletin 64. The BAKER-RAULANG Company, 1219 West 80th Street, Cleveland 2, Ohio.

Baker
Industrial trucks

Circle No. 97 on Reader Service Card for more information



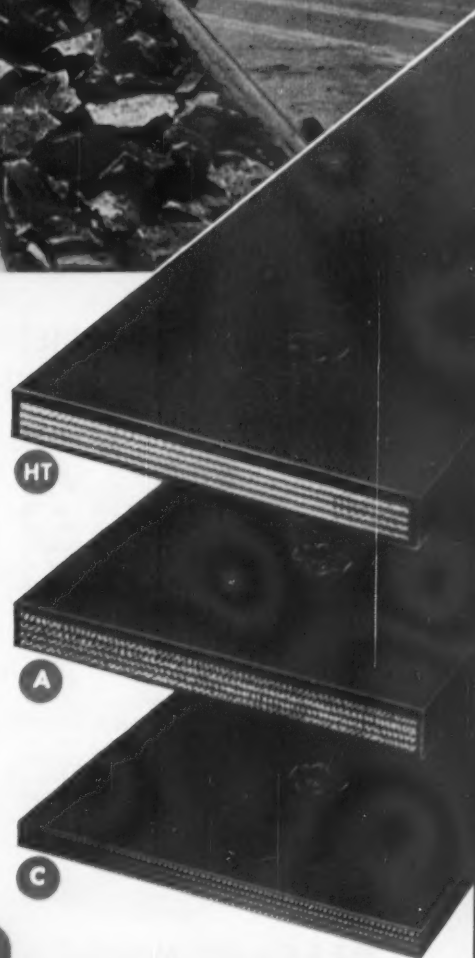
Thermoid Conveyor Belting cuts handling costs in quarries



There's a Thermoid Conveyor Belt designed to lower your handling costs on every quarry job. Here are three examples: **HT** For extremely abrasive materials such as granite, trap rock, flint rock, quartz ore; **A** For slag, lime rock, crushed stone and other highly abrasive materials; **C** For moderate abrasives such as sand, loam, soda, gravel.

Thermoid's exclusive impregnation process welds carcass and cover into an exceptionally strong, durable belt. Finest quality reinforcement and specially compounded rubber stocks assure long life . . . lower your handling costs per ton. There is a complete line of Thermoid Conveyor Belting, Hose and Multi-V Belts for every quarrying application. Call your Thermoid Distributor for information, or write direct.

Circle No. 66 on Reader Service Card



Conveyor & Elevator Belting • Transmission Belting
H.P. & Multiple V-Belts • Wrapped & Molded Hose

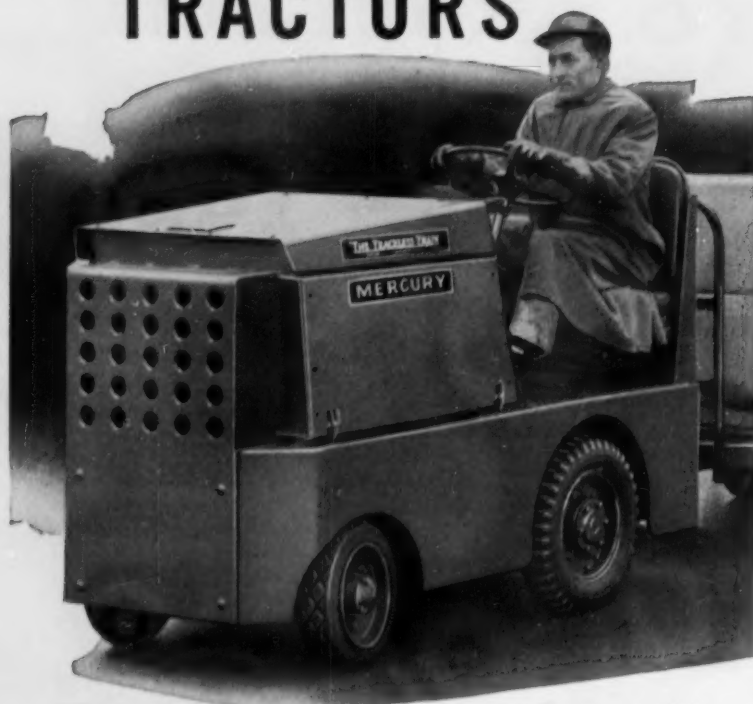
Thermoid

Rubber Sheet Packings • Molded Products
Industrial Brake Linings and Friction Materials

Thermoid Company • Offices & Factories: Trenton, N. J., Nephi, Utah

TONNAGE TRAVELS FOR LESS ON THE MERCURY "TRACKLESS TRAIN"

MERCURY TRACTORS



The most complete line of industrial Gasoline and Electric Tractors

No question about it! The Mercury tractor-trailer method is the outstanding low cost producer for horizontal handling of materials. As originators of the "TRACKLESS TRAIN" system, Mercury offers you over 44 years' experience in the design, manufacture and installation of handling equipment . . . the most complete and versatile line of tractors and trailers. Tractors include the "Tug" Electric Model and the "Buddy"

(shown above) Gasoline Model, both available in various capacities, in either 3 or 4 wheel type, with cushion or pneumatic tires. For extra heavy duty the "Huskie" and "Super-Huskie" Gasoline Tractors offer the user the most dependable and economical service. Gasoline models also available with LP gas fuel systems.

Learn how the Mercury "Trackless Train" can speed material movement and lower cost in your plant. **WRITE TODAY!**



"TUG" Model 550 Electric Tractor. Economy is the outstanding feature of Mercury tractors. Designed to withstand severe service, construction features of Mercury tractors cut maintenance costs to a minimum . . . yet the initial investment is surprisingly small.



MERCURY MANUFACTURING COMPANY

4154 South Halsted Street • Chicago 9, Illinois

Circle No. 154 on Reader Service Card for more information



The American Trade Association Executives' 1954 Award of Merit was recently presented to the Caster and Floor Truck Manufacturers Association. Shown above accepting the award on behalf of the Association is A. L. Foster (right), sales manager of Darnell Corporation. Dr. George W. Robbins, Dean of the School of Business Administration, University of California, makes the presentation.

• A real example of material handling in-action was presented to the California chapter of the Society of Industrial Packaging and Material Handling Engineers at their December meeting. Color movies and slides were used by J. D. Nunn of Lockheed's Burbank plant to help describe the shipment of a full-scale Air Force transport plane from Burbank, California to Marietta, Georgia.

• The Falls Cities Chapter of the American Material Handling Society recently toured the New Albany, Indiana, plant of United States Steel Homes, Inc. Construction methods, quality control procedures and the flow of components were studied by the group.

• Hundreds of manufacturing executives from all sections of the United States attended the American Management Association conference in Cleveland, January 10-11. Plans that have

trimmed excess overhead for efficient companies and tools that have proved their merit on the job were the topics of discussion. Robert C. Ross of Eastman Kodak Company was the material handling speaker.

- **Recently elected president** of The Magnesium Association was D. T. Wellman, president of The Wellman Bronze & Aluminum Company, Cleveland. Other officers include vice president James E. Papall, president of the Magnesium Company of Canada, Ltd., and treasurer J. V. Cosman, president of Superior Bearing Bronze Company.

- **The Pressure Sensitive Tape Council** elected Clarence I. Lee president of the group at its annual meeting at The Greenbrier in Virginia. Lee is associated with Hampton Manufacturing Company. Other members of the council include Behr Manning Corporation, Minnesota Mining and Manufacturing Company, Mystik Adhesive Products, Permacel Tape Corporation, The Seamless Rubber Company, Technical Tape Corporation, U. S. Rubber Company and Van Cleef Bros., Inc.

- **The Jung Hotel** in New Orleans was headquarters for the semi-annual meeting of the National Wooden Pallet Manufacturers Association, January 31 and February 1. The meeting marked completion of the group's first year of full-time operation. A graphic display of NWPMA accomplishments in 1954 was presented by William H. Sardo, Jr., the association's secretary-manager.

- **Featured speaker** at the January meeting of the Illinois Division of the Society of Industrial Packaging and Material Handling Engineers was Joe G. Green of Baker-Raulang Company. His topic was "Selling Packaging and Material Handling Solutions and Cost Reductions to Top Management".

TONNAGE TRAVELS FOR LESS ON THE MERCURY "TRACKLESS TRAIN"

MERCURY TRAILERS



The most complete line of industrial trailers

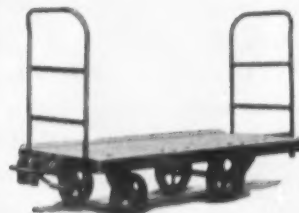
Save valuable man-hours with the low cost tractor-trailer method. Free of any fixed path — the versatile Mercury "TRACKLESS TRAIN" travels wherever material movement dictates... long hauls, short hauls or snaking through congested areas. Delivers more tonnage at lower cost because the "Trackless Train" keeps loads on wheels and readily movable by hand for short distances. Moves more tonnage by merely adding more trailers . . . no increase in power units.



MERCURY MANUFACTURING COMPANY

4154 South Halsted Street • Chicago 9, Illinois

Circle No. 153 on Reader Service Card for more information



Mercury A-310 Castor Steer Trailer—For nearly a half century industry has accepted the A-310 Trailer as its standard because of its suitability for general all-purpose work and its ability to provide the lowest cost transportation per ton mile.

Mercury trailers are designed to meet the flexible requirements of the user. Models include castor steer, fifth-wheel steer and four-wheel steer trailers in capacities ranging from 2000 to 60,000 lbs. . . decks and bodies can be built to suit the commodity handled. Find out how Mercury trailers will save you money and solve the problem of horizontal movement of materials.

Write for free bulletins describing Mercury trailers today.

PAYD* PLAN

will help you reach your 1955 goals

*** PAY-AS-YOU-DEPRECIATE** — *An Entirely New Concept of Financing Machinery Purchases*

Government has stimulated machinery purchases for 1955 by speeding up depreciation allowances. Another competitive year lies ahead. Don't let lack of new equipment *block your 1955 production and profit goals!*

PAYD puts profit-making machinery to work fast!

New as it is, PAYD PLAN is proving to be the logical way to acquire modern machinery. PAYD meets two vital needs: (1) how to buy new machinery with minimum initial cash outlay, (2) how to pay the balance with the aid of faster depreciation allowances. In effect, you write off equipment payments as expense.

PAYD gives you three direct benefits. You put new machinery into profitable production at once. You conserve working capital with a long term repayment timetable. Your payments decline as your machines become costlier to maintain.

An important factor in PAYD is *long terms*. For example, on machine tools and textile machinery, terms go as long as 10 years . . . materials handling

equipment, 8 years . . . construction equipment, 6 years.

The PAYD PLAN charge is 4.25% for each year of the term, computed on the original unpaid balance.

WRITE for new folder describing PAYD PLAN and how it can help you in 1955. Your inquiry handled promptly.



SELLERS OF MACHINERY

PAYD PLAN will increase your sales.
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Circle No. 121 on Reader Service Card for more information

"PALITON"

The proved COST-CUTTER

Low Cost—Long Life—
Least Maintenance.

Five Inch Hydraulic Lift.

Threeway Control for
Raise, Lower and
Neutral Giving Free
Handle for Towing.

Overloading Prevented
By Pre-Set Relief Valve.

Capacities 3,600 and
4,600 lb.
Fork Lengths 36"-42"-48"
Widths 20½" and 27"
Specials to Order.

STOCKS AND SPARES
HELD BY ALL OFFICES

WRITE FOR ILLUSTRATED
LITERATURE:

*with
All the
Advantages*



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Photograph by courtesy of Refrigeration Division of General Motors Ltd.

Circle No. 81 on Reader Service Card for more information

A 3000 lb. die handled like a feather with these special Economy die-handling Lifters



Push-button control for elevating the platform, propelling the machine down the narrow aisles, and moving the dies in and out of the racks, gives finger-tip high speed handling. The storage capacity is multiplied ten times the floor area and with every die located for immediate selection.

This die handling system, Economy engineered and built, is an example of how materials handling problems can be solved by Economy engineers who have specialized in custom-built machines for over 50 years.

Our representatives, trained in engineering, are located in all principal cities. Why not call one in on your material handling or overhead servicing problem?

ECONOMY ENGINEERING CO.

4524 W. Lake St., Chicago 24, Ill.

New York Office
342 Madison Ave., New York 17, N. Y.

Write for new Catalog No. 55 Forty pages of pictures and suggestions for special and standard machines. Every plant manager and maintenance engineer should have this catalog.

Economy makes a complete line of standard lifters



Barrel Racks

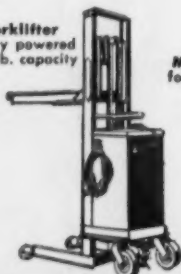


Elevating Table

Shoplifter
for handling dies



Worklifter
battery powered
1000 lb. capacity



Model PUL
for overhead
service



Hi-Reach
telescopes
up to 100 ft.

Circle No. 113 on Reader Service Card for more information

**HERE'S YOUR LATEST
COPY OF CATALOG 754**
Just off the press!

Contains the most
up-to-date and
complete information
on Stock Roller
Chains and Sprockets

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**From the files of
DIAMOND CHAIN ENGINEERS
Backed by 65 Years of Roller Chain Experience**

In this latest 64-page Catalog 754, you will find the most authentic and complete data on Roller Chains and Sprockets—data drawn from 65 years of experience in the manufacture and application of Roller Chains. There is no substitute for such experience.

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CLIP COUPON AND MAIL TODAY!

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Circle No. 105 on Reader Service Card for more information



in Equipment

Summaries of latest information from manufacturers. For more details, use the free-mailing Reader Service Card.



High Capacity Gyrating Screen

A light, compact, three by eight foot gyrating screen with a full 24 square feet of screening surface is offered by Simplicity Engineering Company. The unit is tapered at the discharge end so it will easily fit existing conveyors, and may be obtained with either a stainless screen cloth or mild steel deck and spring steel screen cloth. It is said to be particularly adaptable to the food and chemical industries or wherever a low cost, high capacity gyrating screen is needed for screening lightweight materials.

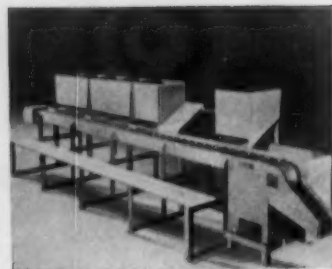
Circle No. 170 on Reader Service Card for more information



Cab Permits All-Year-Round Operation

An "all weather" cab which will permit Buda 6000-pound gasoline or diesel pneumatic tire fork trucks to operate all-year-round, regardless of weather conditions, is offered by The Buda Company, Division of Allis-Chalmers Manufacturing Company. The cab's features include full driver visibility, safety glass throughout, adjustable door windows, entry from either side of cab, electric windshield wipers and tinted plexiglass overhead window. Heater and defroster are optional.

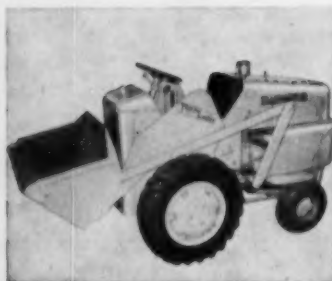
Circle No. 171 on Reader Service Card for more information



Small Parts Assembler

The problem of assembling small parts in proper sequence with minimum effort and fatigue has been solved by Sage Equipment Company. The company is manufacturing a self-contained assembly-conveyor equipped with bins arranged in order so that parts are within convenient reach of the operators. The belt is equipped with studs over which the finished product is assembled. Operators can sit while working, as the unit is at table height.

Circle No. 172 on Reader Service Card for more information

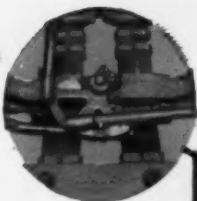


For Confined Areas

The model TL-6 Tracto-Loader is the latest addition to the wheel loader line of Tractomotive Corporation. The new unit weighs 6000 pounds and is equipped with a combination clutch type transmission and torque converter drive. Bucket capacity is $\frac{1}{2}$ cubic yard and it can be tipped back 21 degrees at ground level. The unit is said to be ideal for working in confined areas, as it has a turning radius of 6 feet, 6 inches.

Circle No. 173 on Reader Service Card for more information

SPECIAL STEERING
GEOMETRY—
360° TURNS



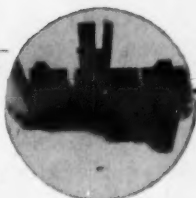
CLEAR FLOOR
BOARD FOR GREATER
SAFETY IN EXITS



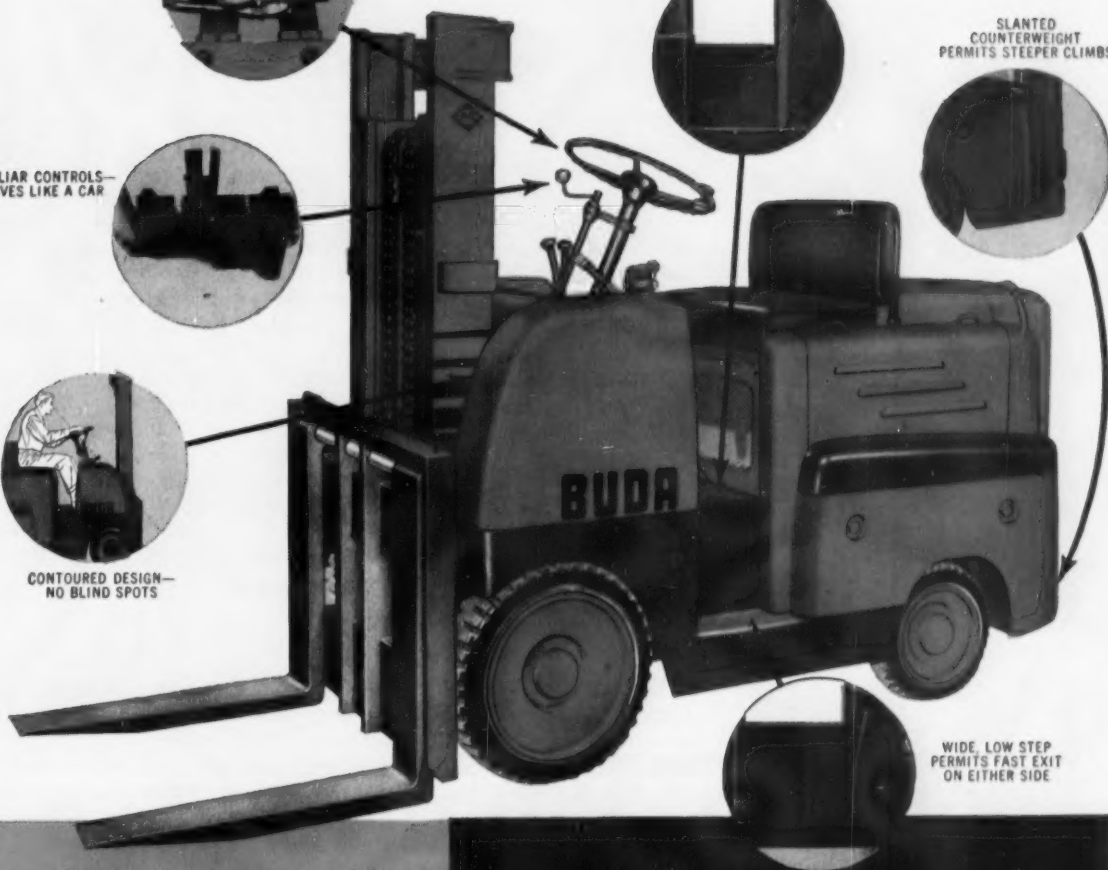
SLANTED
COUNTERWEIGHT
PERMITS STEEPER CLIMBS



FAMILIAR CONTROLS—
DRIVES LIKE A CAR



CONTOURED DESIGN—
NO BLIND SPOTS



WIDE, LOW STEP
PERMITS FAST EXIT
ON EITHER SIDE



BUDA

HAS THE MOST ADVANCED
LIFT TRUCK DESIGN IN THE FIELD!



NEW BOOKLET
gives all the vital facts about the new Buda.
Packed with information, it tells how you
can cut handling costs and get better
service. Write today for your free copy.

The Buda Fork Lift Truck is new, different, revolutionary! No other lift truck can come near Buda in performance, safety and stamina. All controls are like those of the conventional automobile—accelerator, brake, clutch, steering wheel are familiar to the newest operator. Floor space is clear . . . no pedals to trip up a hasty exit. Buda does a 360° turn in a few square feet, spinning like a top if you want . . . with or without load. It will climb steeper grades, stack faster and last longer . . . because Buda is designed to be best.



Allis-Chalmers Manufacturing Company

BUDA DIVISION, HARVEY, ILLINOIS

Circle No. 43 on Reader Service Card for more information

FEBRUARY, 1955

49



Small But Powerful

More than three years of development and field-testing by The Frank G. Hough Company has resulted in an entirely new HA model Payloader tractor-shovel. The smallest unit in the line, the new model has twice as much lifting, digging and carrying capacity as its predecessor, and combines torque converter drive and full-reversing transmission. The bucket has a payload capacity of 18 cubic feet, and the maximum dumping height has been increased 18 percent. Greater maneuverability, operator safety and ease of operation are claimed.

Circle No. 174 on Reader Service Card for more information



Radio For Noisy Areas

Motorola Communications & Electronics Division is offering a new, low cost, "packaged" two-way radio system for use in repair trucks or other vehicles. It provides a means of directing a work crew's activities as well as communicating with headquarters and other vehicles, and is especially recommended for use in industrial areas characterized by high audible noise levels. The system consists of receiver, transmitter and power supply with an audio booster amplifier, and fits into a standard 15 inch housing.

Circle No. 175 on Reader Service Card for more information



Raises and Lowers Independently

The latest model in the line of equipment offered by Speedways Conveyors, Inc. is a portable power belt conveyor that raises and lowers independently at either end. Called the SpeedLift, the unit was designed for loading and unloading trucks, railway cars, etc., and adjusts from either the right or left side to a 30 degree incline, with each supporting leg adjustable independently. Maximum capacity of the lightweight portable conveyor is 500-pounds.

Circle No. 176 on Reader Service Card for more information



Heavy-Duty Caster

A new type eight inch diameter heavy-duty caster has been developed by Faultless Caster Corporation. The double ball bearing, swivel plate caster is designed for loads up to 1500 pounds. Known as the H-900 Series, the casters are available in a wide choice of both soft and hard tread wheels. The Faultless H-9700 Series is the rigid companion caster for the H-900 Series.

Circle No. 177 on Reader Service Card for more information



Drags Hand Truck

To enable two-wheel hand trucks to be carried on an inflloor dragline system, Lewis-Shepard Products, Inc. designed a special Dragmaster Carrier. The carrier locks a two-wheel hand truck and its load in position, and features a cam-release which permits quick and easy engagement of the carrier from the line. A flip of the Dragline pin engages the carrier to the line. The unit is equipped with three rubber tired swivel casters.

Circle No. 178 on Reader Service Card for more information

(Continued on page 168)

P&H**OVERHEAD CRANES**

Here, in the Peoria plant of the Caterpillar Tractor Co., is one of their 11 new P&H Cranes with Magnetorque AC control. Caterpillar owns more than 100 P&H Overhead Cranes.

Eleven more for CATERPILLAR

...all **P&H** **MAGNETORQUE**[®] equipped!

The big demand is for Magnetorque! Old customers, new customers — everybody prefers Magnetorque. Here's why:

Management likes it better because it offers tops in crane performance with the convenience and economy of AC power.

Operators like it better because it's so much easier to use . . . because it makes any operator a star operator. It's simpler, smoother, more

accurate — the finest crane control ever devised.

And naturally, *we* like it because every Magnetorque-equipped crane we sell makes more friends for P&H. Through 7 years and over 900 new installations we've had no failures. Service problems are fewer than ever. Magnetorque lasts the life of the crane.

If you contemplate crane installations, see P&H. You'll quickly see why so many leading companies standardize on P&H.

P&H OVERHEAD CRANE DIVISION

HARNISCHFEGER CORPORATION

MILWAUKEE 46, WISCONSIN



the **P&H** Line

TRUCK CRANES

CRAWLER CRANES

POWER SHOVELS

PREFABRICATED HOMES

DERICKS

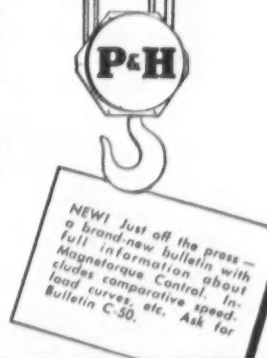
SOIL STABILIZERS

WELDING EQUIPMENT

OVERHEAD CRANES

Circle No. 65 on Reader Service Card for more information

FEBRUARY, 1955



LITERATURE

FEATURED IN THIS MONTH'S ADVERTISEMENTS

Feeds Presses: How the electric lifttable feeds presses easily and quickly is told pictorially by The Colson Corporation. Descriptive literature is offered.

Circle 18 on Reader Service Card

Independent Braking: Only Clark electrics give you three independent braking systems, according to the Industrial Truck Division of Clark Equipment Company. Free booklet describes features and advantages of electric fork trucks.

Circle 28 on Reader Service Card

Pulsating Panel: If you have material hang-up problems in bins, PneuBin will eliminate flow stoppage and save you money says Gerotor May Corporation.

Circle 15 on Reader Service Card

Up And Over: You can speed up yard work with the up and over arm reach of Hyster Company's Karry Krane, says this manufacturer. The unit is highly maneuverable for emergency and utility lifting and towing.

Circle 76 on Reader Service Card

Out Performs All Others: Lift Trucks Incorporated tells how its Dyna-Dual power unit out performs all others for ease of operation, dependability, lowest maintenance cost and economy of power.

Circle 41 on Reader Service Card

Something Extra: Versabar racks give you extras without extra cost, according to M-H Standard Company. See for yourself.

Circle 53 on Reader Service Card

Tipping's Easy: You can break a load faster and easier with a Dico Company truck, says the manufacturer, which suggests you compare before you buy.

Circle 1 on Reader Service Card

10 to 1 Faster: Read about the race between the man with the stapler and the man with the glue, as reported by Bostitch. The winner was favored and came out ahead by a margin of 10 to 1.

Circle 21 on Reader Service Card

Covering Up: There's no reason why you should cease loading or unloading operations just because the weather's inclement. Capco dock covers will give you complete protection regardless of the weather. Details are available.

Circle 68 on Reader Service Card

It's Their Business: C. E. Robinson Company says that cutting your costs is their business and it's a simple job with the Stak-Pal tubular stacking racks. They'd like to prove it to you.

Circle 80 on Reader Service Card

Really Fast: In a few seconds, one man with G. H. Tennant Company's sweeper can clean an area faster and cleaner than a skilled pushbroom crew of three to 12 men. The sweeper is said to pay for itself in one to six months, in manhours alone.

Circle 50 on Reader Service Card

Cuts Loading Time: Michigan's power-shift transmission will cut your loading time and

eliminate tiresome clutching, as it does the work for you. All you do is operate the finger-tip hand levers on the steering column, while moving in either direction.

Circle 27 on Reader Service Card

Years Ahead: The Frank G. Hough Company's model HA Payloader is said to be years ahead in design, construction and performance. Complete details are offered.

Circle 12 on Reader Service Card

Practical Idea: Efficient electric hoists to move materials overhead and release floor space for more valuable operations is called a practical idea for the production man by Chisholm-Moore Hoist Division.

Circle 19 on Reader Service Card

Works For Babies: Gerber's Baby Foods employs 750 people in six buildings which are widely separated over 15 acres. But there's no problem about quick, convenient transportation for plant administrative personnel, because Autoette, Inc. is right on the job. Read the complete story.

Circle 44 on Reader Service Card

Long or Awkward Loads? If your loads are long or awkward, The Baker-Raulang Company's side-loading Traveloader can pick them up and carry them with ease, without changing travel direction. The unit carries like a straddle truck, delivers like a road truck and stacks like a fork truck.

Circle 108 on Reader Service Card

Now!

a Compact TRACTO LOADER for Close-Quarter Work

Ideal For Handling Bulk Material
in Confined Areas . . . For
Unloading Box Cars, Traveling
Through Narrow Aisles and Doorways,
Making Hairpin Turns Near
Columns and Posts



Has Short 6 1/2-ft Turning Radius . . . Over-all
Length only 9 ft, 7 in., Width 4 ft, 5 in. . . .
Plus Other Outstanding Performance and Service Features

Tip-Back Bucket Gets and Carries Bigger Loads
22° tip-back of bucket at ground level gives you
"scooping action" for fast, full loading. You also save
time getting away with load, hold spillage to a minimum,
because bucket tips back quickly to a 50° carry
angle at only 3 ft above ground. Low carrying position
plus greater tip-back moves load center closer to tractor
for better over-all balance.

Torque Converter Drive Works Smoother, Easier
. . . crowds steadily into the pile, eliminates most shifting,
engine stalling and wheel spinning . . . greatly reduces
tire wear. Tractor's weight plus large drive
wheels enables the TL-6 to take advantage of the high,
three-to-one torque ratio.

Clutch-Type Transmission Speeds Work Cycle
You simply push a single lever to go forward; pull it

TRACTOMOTIVE TL-6 TRACTO LOADER

BUCKET CAPACITY: 1/2 cu yd

BRAKE HP: 33.7

SPEEDS: 2 forward; up to 10 mph
2 reverse; up to 20 mph

WEIGHT: 6,000 lb

back for reverse. Reverse is twice as fast as forward
to assure the fastest possible work cycles.

Built for Long, Hard Service — filters in hydraulic
system and transmission . . . replaceable hardened pins
and bushings. All maintenance points easily accessible.
Lift and dump cylinders are located well above floor
for extra protection from dust.

Ask your Allis-Chalmers Industrial Tractor Dealer to
show you the TL-6 in action. See how Tracto-Loader
design can speed your operation.

Sold and Serviced by your Allis-Chalmers Industrial Tractor Dealer

TRACTOMOTIVE

TRACTOMOTIVE CORPORATION

Deerfield, Illinois



Tracto-Loaders • Tracto-Shovels • Side Booms
and Hydraulic Rippers for Allis-Chalmers
Crawler Tractors • Loader and Shoulder Main-
tainer for Allis-Chalmers "D" Motor Grader.

Circle No. 125 on Reader Service Card for more information

HORSEPOWER

**... a size and type
for every need**

Whether it's repowering old equipment or buying new — too much or too little horsepower can prove costly. Equally as important as proper horsepower, is correct engineering of the application. Quite often, it is necessary that engine accessories be mounted in accordance with requirements of the equipment. It usually takes a right size and right design to supply the specific power needs for each type of machinery.

The engineering and sales policy of Hercules Motors Corporation is to design and sell internal combustion engines to fulfill the specific needs of each customer. For example, in equipment with limited engine installation area, "flat" or horizontal engines are often the answer. These engines can be placed under floors, or in any area which does not permit vertical installation. (Consult factory for models available.) Special Hercules vertical engines with accessories located on one side, permit installations near a firewall or bulkhead which is permanent and does not allow access to one side of the engine. These are but a few of the many problems which are often encountered in the proper application of an engine.

Our basic line of Hercules engines, 70 models from 3 to 500 H.P., is designed and engineered to meet the exact and varying demands of industry. We build engines for operation on gasoline, diesel fuel, natural gas, L. P. Gas, kerosene, or any other standard fuel that is readily available. That's why we have been known as "Engine Manufacturing Specialists Since 1915"

If you'd like to know more about our engines, write for the folder "Hercules Engines". It lists the sizes and power ratings of each model. If, however, you have a specific power problem give us the details. Our engineers will work with you to solve your problems and of course, there is no obligation.

Engine Specialists since 1915



HERCULES ENGINES

HERCULES MOTORS CORPORATION

113 Eleventh Street, S. E. • Canton, Ohio

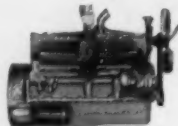
Circle No. 14 on Reader Service Card for more information



Hercules Model NXB
2 cylinder gasoline engine
15.6 H.P.



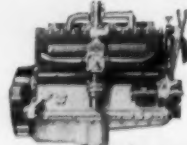
Hercules Model DOOD
4 cylinder diesel engine
79 H.P.



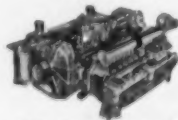
Hercules Model JXD
6 cylinder gasoline engine
112 H.P.



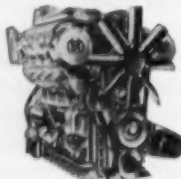
Hercules Model DIX6D
6 cylinder diesel engine
93 H.P.



Hercules Model HXE
6 cylinder gasoline engine
236 H.P.



Hercules Model DFXHF
6 cylinder diesel engine
260 H.P.



Hercules Model DNX-VBDTS
8 cylinder diesel engine
300 H.P.

AD LITERATURE

Continued

Self-Propelled: Unit Crane & Shovel Corporation tells you how to speed up material handling with a self-propelled, rubber tired yard crane.

Circle 74 on Reader Service Card

Costs Little, Saves Lots: A truck which is ideal for small installations in manufacturing, processing and warehousing is described in detail by Market Forge Company.

Circle 75 on Reader Service Card

Complete or Incomplete: It doesn't matter whether your plans for a conveyor system are complete or not, Standard Conveyor Company engineers would like to recommend a system that will save you time and money. There's no obligation.

Circle 45 on Reader Service Card

Operators Like It: That's what Harnischfeger Corporation claims about its Magnetorque equipped overhead crane. Find out why it's better.

Circle 65 on Reader Service Card

Power Selectivity: Engines which provide the most complete power selectivity to fit both the machine and the job are offered by Wisconsin Motor Corporation, manufacturers of heavy-duty air-cooled engines.

Circle 60 on Reader Service Card

For Truck Or Rail: Find out from Magnesium Products of Milwaukee how to save manpower, speed loading and reduce cost with magnesium dockboards designed for truck or rail.

Circle 58 on Reader Service Card

Economy-Wise: Marvel-Schebler Products Division points out the advantages of converting lift trucks to LP-Gas carburetion, and predicts that more than 170,000 fork trucks will be using LPG by the end of 1955.

Circle 56 on Reader Service Card

FLOW



In foreground, loading heap sand for transportation to magnetic conditioner. In background, delivering facing sand to mold.



Dumping heap sand into hopper of magnetic conditioner. The fast-loading, fast-traveling, fast-discharging Auto-Scoop moves more loads per hour, speeds production.



A load of facing sand on its way to a mold. Runway is defined by banks of molds. Compact design of the Jaeger Auto-Scoop simplifies work in narrow aisles, cramped quarters.



Unloading facing sand into hopper at molding machine. Simple controls and full visibility enable operator to spot load accurately, dump fast or slow, discharge partial loads.

Jaeger Auto-Scoops cut handling costs in Darling foundry

... move more materials, faster, than loaders previously used

Replacing other loaders of less advanced design, Auto-Scoops handle more materials, with less effort, and get around in the plant more easily, reports Darling Valve & Mfg. Co., Williamsport, Pa. They're worked 18 hours a day on all kinds of sand handling, and also bagged materials, castings, etc. Operators also say they like the Auto-Scoops much better than any loaders previously used.

Superior performance is achieved because the Jaeger Auto-Scoop is specially engineered for most efficient scoop loader

operation. It moves up to 25% faster, turns in only 6'6" radius with bucket in carry position, dumps over edges to 6'8" high, reaches to 2'7" and easily handles loads to 1200 lbs.—all greater than comparable loaders. Lower bucket tilt-back and lower carry insure a full bucket, improved stability, faster travel and eliminate excessive traction crowding. Boom arms and bucket are under hydraulic control.

These are only a few of its features that contribute to overall gains in production. For more data and specifications, write for Catalog L12-4 and name of the Jaeger distributor nearest you.

For bigger work, Jaeger offers the 1 cu. yd. Load-Plus, with torque converter, power steering and either front-wheel or 4-wheel drive.

The Jaeger Machine Company, 611 Dublin Avenue, Columbus 16, Ohio

JAEGER LOAD-PLUS *auto-scoop*

AIR COMPRESSORS • PUMPS • MIXERS • PAVING MACHINES

Distributors throughout U. S. and Canada and Principal Cities of the World

Circle No. 126 on Reader Service Card for more information



Besides bulk handling, Auto-Scoops come in handy for handling bagged materials, drums, etc. Big lifting capacity and large bucket facilitate maximum loads.



The Auto-Scoops are also used for transporting flasks and castings. An unusual additional application is to hoist maintenance workers to overhead lighting fixtures.

FREES POWER TRUCKS FOR TIERING!



Lightweight HAND PALLET TRUCK

● Why tie up power trucks on jobs that can be handled by a RAYMOND Lightweight Hand Pallet Truck! Use this 2,000 lb. capacity truck for all your short hauls . . . and to ease rush hour handling.

● The RAYMOND Lightweight is the sturdiest hand pallet truck on the market! Its one-piece welded forks have 1/3 more strength than bolted forks found on "similar" trucks. Ram pistons, axles and lever shafts are made of heat-treated alloy steel. Pump piston is heavily chrome-plated to prolong pump life and prevent leakage.

● This truck is highly maneuverable in cramped areas due to its light weight and 270° steering arc. It offers effortless pallet entry, foot-pedal operation . . . has rugged reinforced handle and dual-purpose brake.

● SEND FOR CATALOG See the complete line of RAYMOND Hand Pallet Trucks before you buy additional equipment. Mail coupon for new catalog today.

The RAYMOND CORPORATION

3332 Madison St., Greene, N.Y.

Please send me your new Hydraulic Equipment Catalog.

NAME _____ TITLE _____

COMPANY _____

STREET _____

CITY _____ STATE _____

Circle No. 26 on Reader Service Card

AD LITERATURE

Continued

The Tie That Binds: Gerrard Steel Strapping Division says its strapping will tie anything you've ever seen, from carloads of steel pipe to cartons of parts.

Circle 101 on Reader Service Card

They're Better: "Better Batteries Through Research" is the theme of Gould-National Batteries, Inc. which says their batteries are better because they're purer.

Circle 98 on Reader Service Card

Most Advanced: Allis-Chalmers Manufacturing Company, Buda Division, says you need look only to it for the most advanced lift truck design in the field, and claims no other lift truck can come near Buda in performance, safety and stamina.

Circle 43 on Reader Service Card

Power On Demand: The Appleton Reelite provides a traveling power supply for crane, conveyor or other material handling operations. Cables pay out, latch and rewind automatically while power flows without interruption. Manufacturer is Appleton Electric Company.

Circle 22 on Reader Service Card

Difference Is Underneath: Under-side construction design that gives you greater strength, longer life with a minimum of weight, is said by Bronco Products Company to be exclusive on its magnesium bridge ramps.

Circle 62 on Reader Service Card

A New Hinge: Time studies show that the new A-F hinged section of The Alvey-Ferguson Company greatly increases efficiency in frequently opened roller conveyors. Other advantages are also pointed out.

Circle 79 on Reader Service Card

Everywhere You Go: It's easy to find material handling

men who have discovered its asphaltum treated belts for moving greasy parts or tools, according to Buffalo Weaving & Belting Company. Free folder gives the facts.

Circle 24 on Reader Service Card

Just Right: The overhead crane that saves its user money is one that is just right for its specific job, says Whiting Corporation. The company tells why heavy handling costs less with Whiting cranes.

Circle 2 on Reader Service Card

Cools Coils: How an Indiana steel mill utilized the engineering, manufacturing and installation experience of Jervis B. Webb Company to secure an automatic conveyor system that handles hot rod coils from reels through automatic water quenching, to storage and shipping, without a hand touching them, is news this month.

Circle 77 on Reader Service Card

Tire Source: Phoenix Manufacturing Company would like to tell you of the advantages of buying cured-on solid tires from their company, which offers an exclusive "E-Z" rolling tread compound.

Circle 55 on Reader Service Card

Strength of Pillars: The Neff & Fry Company would like you to have a copy of its folder, "Bins With The Strength of Pillars", which explains the advantages of the company's storage bins. The bins can handle more than 80 kinds of flowable bulk materials.

Circle 8 on Reader Service Card

Dumps Easily: Sterling Wheelbarrow Company has a cart that's "tailor-made" for wheeling coal, scrap, chips and similar heavy materials. The unit is extra strong and rugged, rests securely in any one of three positions, and dumps easily.

Circle 32 on Reader Service Card

Less Idle Time: Moto-Trucs offer less idle time because of

simplified operator controls, says The Moto-Truc Company, manufacturer of walkie type trucks.

Circle 34 on Reader Service Card

Continuous Flow: Find out from Metzgar Conveyor Company how to consolidate handling and production with belt or live roller conveyor. A continuous flow through assembly, inspection, packaging and shipping can be obtained through use of a Metzgar apron conveyor, says this company.

Circle 11 on Reader Service Card

More Efficient: Two-way radio control from dispatcher-to-operator will increase the efficiency of your material handling vehicles according to Motorola Communications & Electronics, Inc.

Circle 61 on Reader Service Card

A Few Cents Worth: It costs only a few pennies a day for electricity to keep the Budgit electric hoist going, lifting loads all day long. Manning, Maxwell & Moore, Inc. offers details on how you can give economy a lift.

Circle 36 on Reader Service Card

Ends Exhaust Problem: Oxy-Catalyst, Inc. would like to tell you how to eliminate dangerous hydrocarbons and CO fumes from gasoline and LP-Powered equipment. Booklet gives facts.

Circle 49 on Reader Service Card

Swivel and Roll: Darnell Corporation, Ltd. casters will perform more efficiently at lower cost and last longer, it is claimed. And what's more, they always swivel and roll!

Circle 17 on Reader Service Card

Thousands in Service: Find out from Electrolift, Inc. why it will pay you to be guided by the experience of leading American firms who are using ElectroLift hoists. Thousands of the units are serving industry today.

Circle 16 on Reader Service Card

SAVED

SIX FEET in EVERY AISLE



MODEL E2ST • Cap. 2,000 lbs. Also available in 3,000 lb. cap. model.

with



Electric TIERING TRUCK

ANOTHER LARGE WAREHOUSE actually halved its aisle space with a RAYMOND Tiering Truck! Aisles 12-ft. wide were reduced to 6-ft. Result: more useable storage space.

NOW YOU CAN make comparable space savings in your own plant or warehouse with a RAYMOND Tiering Truck. Because this truck actually right-angle tiers 4-ft. pallet loads from aisles only 6-ft. wide. Think what this means in increased storage capacity without enlarging your present facilities!

RAYMOND TIERING TRUCK . . . operates in narrow aisles due to its short length and patented* off-set drive wheel with 200° turning arc. The truck's lightweight permits use on low-capacity elevators, floors, 51" free lift enables loads to be stacked in low-ceiling areas, truck trailers, boxcars without increasing overall height. Truck is equipped with new power unit that opens up like a book for fast, easy servicing.

The RAYMOND CORPORATION

3338 Madison St., Greene, N.Y.

- () Please send Bulletin 830 describing 2,000 lb. cap. Tiering Truck.
() Please have your representative call.

NAME _____ TITLE _____

COMPANY _____

STREET _____

CITY _____ STATE _____

* PATENT NO. 2,564,002

**GET
FULL
DETAILS!**

Circle No. 25 on Reader Service Card for more information



This is no ordinary hopper. It's a Roura hopper. And Roura makes 'em rugged. It takes on the toughest assignments . . . day in and day out . . . and comes back for more. Even the crash-bang handling of careless lift truck operators doesn't bother a Roura for it's built of extra heavy metal . . . welded with care . . . braced and double-braced . . . for years of trouble-free service.

Your Roura Self-Dumping Hopper will cut hand-unloading costs at least 50% . . . pay for itself before you know it. Available in sizes from $\frac{1}{2}$ to 2 cubic yards for use with fork or platform lift trucks, mounted on live skids or with malleable or rubber tired casters.

ROURA Self-Dumping HOPPER

HERE'S HOW to get more details about Roura Self-Dumping Hoppers. Just attach this coupon to your letterhead . . . sign your name . . . and mail to . . .
ROURA IRON WORKS, INC.
1411 Woodland Ave., Detroit 11, Michigan

Circle No. 5 on Reader Service Card

58

news from the SALES FIELD

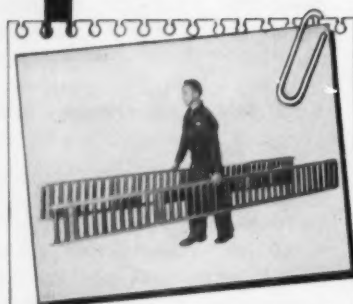
Establishment of a new district sales office in Buffalo, New York, has been announced by Faultless Caster Corporation. Glen B. Ranney, sales representative, heads up the Glen B. Ranney new office. He attended Bradley College and Michigan State College, and had six years industrial experience before joining Faultless.



G. F. Ryan has been named sales manager of the New York district for Leschen Wire Rope Division, H. K. Porter Company, Inc. He will be responsible for Leschen sales activities in New York, New England, New Jersey, Maryland and Eastern Pennsylvania.

Appointment of Jack R. Murphy as Buffalo district sales representative for National Container Corporation's Multi-wall Bag Division was recently announced. Murphy is chairman of the Bag Committee of the Packaging Institute, Inc. and was formerly a purchasing agent for General Mills, Inc.

Clark Equipment Company has appointed three new product sales managers, consolidated its regional sales territories and re-assigned sales responsibilities, according to L. A. DePolis, general sales manager. New product sales managers are Glen R. Johnson, Jr., for gas trucks, Milton G. Peck for electric trucks and M. B. Dick-



good idea!

ALL-STEEL ARR-O-ROLL. Jr. units are light yet strong, ruggedly built. Easily carried by one man, ideal for any portable conveying jobs. Quickly set up, easily torn down, store away in small space. For even lighter units get **ARR-O-ROLITE**, aluminum frame steel rollers. Will do anything wheel conveyor will do and some jobs wheel conveyors won't do.

ANOTHER GOOD IDEA!

Take *all* your handling problems to an **ARROW** specialist. Here are just a few:

LOS ANGELES, CALIF.
M. E. Canfield Company
OAKLAND, CALIFORNIA
E. C. Buehrer Assoc., Inc.
MERIDEN, CONNECTICUT
Production Equipment Co.
CHICAGO, ILLINOIS
B. E. Weber Company, Inc.
ROCKFORD, ILLINOIS
C. E. Paulson & Company
INDIANAPOLIS, IND.
C. H. Ellis Company, Inc.
BROOKLINE, MASS.
Robert Abel & Co., Inc.
DETROIT, MICHIGAN
Eastern Mich. Ind. Sales Co.
MINNEAPOLIS, MINN.
Skarnes Eng. & Supply Co.
OMAHA, NEBRASKA
S. Riekes & Sons
CLEVELAND, OHIO
Morrison Company
DALLAS, TEXAS
A. C. Andrews Co.
MILWAUKEE, WISC.
E. G. Artz, Inc.

Full facts on all **ARROW** power and gravity conveyors. Write to:

arrow
PRODUCTS, INC.

207 Arrow Bldg. 405 Front St. Grand Rapids, Mich.
Circle No. 151 on Reader Service Card
FLOW

Act now—have a money-saving B.F. Goodrich

TW
TIRE AND WHEEL
ANALYSIS

ANALYSIS made in your plant today!



● You can save as much as 50% on industrial tire costs with the money-saving B. F. Goodrich Tire and Wheel Analysis Plan! Call in your local B. F. Goodrich representative today. He's trained to study your materials handling set-up. He knows the kind of industrial tires—the tread compounds and tread designs—that will give the best service at lowest cost in your type of work. He'll recommend these tires to you. And this service costs you nothing, puts you under no obligation.

Industrial tire users across the country have benefited from the recommendations of the B. F. Goodrich Tire and Wheel Analysis man. They have saved up to 20% on *maintenance costs alone* by following the suggestions he makes. Why not find out now how much the B. F. Goodrich Tire and Wheel Analysis Plan can save you!

You can be sure the advice you get from your BFG man will be impartial. He has no axe to grind for any particular type of industrial tire—for B. F. Goodrich makes, and BFG retailers sell, a complete line of industrial tires.

Call your local B. F. Goodrich representative today and ask him to make a free Tire and Wheel Analysis in your plant, or mail the coupon. A special TW Analysis Plan is available for manufacturers of industrial handling equipment.

Specify B. F. Goodrich tires when ordering new equipment



The B. F. Goodrich Company
Department TW-469, Akron 18, Ohio.

Please send me:

- ☐ Additional information on your new Tire and Wheel Analysis Plan
☐ A free copy of your "Industrial Tire Guidebook"

Name _____

Company _____

Street _____

City _____ Zone _____ State _____

Circle No. 86 on Reader Service Card for more information

FEBRUARY, 1955

59

Speed Up Material Handling WITH A **UNIT 357**



**It's SELF-PROPELLED
It RIDES ON RUBBER**

Tough operating conditions mean nothing to this rugged, service-proven mobile crane. Operates with top speed, ease, and economy in any season or weather. It's designed to handle all types of jobs . . . dismantling, moving or erecting machinery . . . loading and unloading structural iron, pipe, bars, lumber and equipment of all types. Takes high cost and hard work out of material handling jobs for trouble-free, reliable operation. Reduces operator fatigue and increases production.

The UNIT 357 has quick and easy maneuverability, even in cramped yard operations. It is operated by ONE man . . . powered by ONE engine . . . swings in a 360° circle. Streamlined FULL VISION CAB gives operator complete visibility in all directions. Speeds up job. Promotes safety.

Get the complete 357 story . . . its low cost . . . its fast delivery . . . its many modern and exclusive features. Write for Catalog L-301.



UNIT 357 Mobile Crane equipped with clamshell bucket. Can also be had with crane hook or magnet.

UNIT CRANE & SHOVEL CORP., 6531 W. Burnham St., Milwaukee 14, Wis., U.S.A.

Crawler and Mobile models — 1/2 and 3/4 Yd. Excavators. Cranes up to 20 tons capacity.



SHOVELS • GRADERS • CRANES • TRENCHERS • MAGNETS

Circle No. 74 on Reader Service Card for more information

A 6021-2/3-C

SALES FIELD

Continued

ey for Ross carriers. Consolidation of sales territories reduces from six to three the number of sales regions. **C. I. Ucker** is sales manager for the Eastern Region, with headquarters in New York City, **Dan Stearns** remains as Midwestern Region sales manager, with headquarters in Chicago, and **J. I. Beicher** retains the position of Western Region sales manager in San Francisco. District managers are **P. A. Marston**, **B. E. Phillips**, **J. J. Shand**, **P. E. Campbell** and **J. J. Mlynski**.

Northwestern sales manager for **Bucyrus-Erie Company** is **Robert P. Brooks**. He takes over responsibility for the sales of Bucyrus-Erie products in the states of Wash-



Robt. P. Brooks ington, Oregon, Idaho and Montana, the Territory of Alaska, the provinces of British Columbia and Alberta, and the Yukon Territory. He will maintain headquarters in the Seattle district sales office.

Exclusive sales and service representative for **Lewis-Shepard Products, Inc.** in the New York City area is **George E. Campbell**, who will represent the firm in lower Manhattan. Campbell formerly was with Bridgeport Crane Company and Yale and Towne Manufacturing Company in Syracuse, New York.

Wakefield Bearing Corporation has a new sales agent—**The Matthews Equipment Company** of Providence, R. I., Greenville, S. C. and Atlanta, Ga. Matthews will represent the firm in the states of Virginia, North and South Carolina,



Here is the

Inside Story...

on new economy and efficiency in small parts handling with...

NESTIER



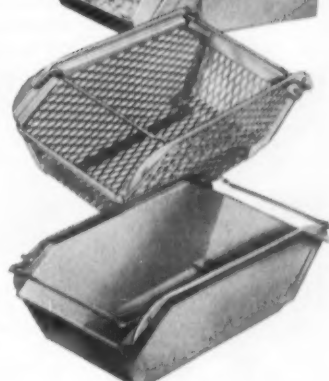
NEW CATALOG DESCRIBES INTEGRATED PRODUCT LINE AND SYSTEMS



Just off the press, this new NesTier catalog contains the answer to small parts handling problems of all types. It tells the complete story of NesTier equipment... the equipment pre-engineered to permit standardization on one type of materials handling container throughout your plant.

Fully illustrated, CATALOG DN-1000 gives a comprehensive explanation of the profitable savings and increased efficiency possible when small and medium size parts are handled the NesTier way. All NesTier equipment is described and illustrated, including newly developed units that quickly convert standard NesTier boxes and baskets into an integrated materials handling system. Specifications for all products are presented in chart form for easy reference.

The key to lower handling costs is yours without obligation... just fill in and return the coupon today for your free copy of CATALOG DN-1000.



C-200-DN

NESTIER

... First in small parts handling

The Chas. Wm. Doepke Mfg. Co., Inc.

8836 BLUE ASH ROAD • ROSSMOYNE, OHIO

The Chas. Wm. Doepke Mfg. Co., Inc.

8836 BLUE ASH ROAD • ROSSMOYNE, OHIO

Please send me a copy of your new CATALOG DN-1000.

Name _____ Title _____

Company _____

Address _____

City _____ Zone _____ State _____

Circle No. 88 on Reader Service Card for more information

FEBRUARY, 1955

61



What's in it for you?

The answer is...plenty! USP Palletainers engineers have provided yet another materials handling development that is rapidly revolutionizing the handling of fine materials such as powdered chemicals, rubber pellets, small parts, flour, special ingredients, etc.

Palletainers, equipped with dump type end gate and heavy paper liners, are providing amazing economies and conveniences in all types of bulk handling. And...they quickly pay for themselves in *actual* savings of your time and materials.

Palletainers are 'engineered containers', available in a broad range of sizes, types and capacities to meet every conceivable handling requirement. Get the facts from your nearest USP Palletainer representative. He will be glad to help you solve your handling problems—quickly and economically.



See for yourself... send today for your copy of the big, new illustrated Palletainer booklet. It contains dozens of interestingly different applications that will show you handling, storing, shipping methods.

PALLETAINERS

manufactured by **UNION STEEL PRODUCTS CO.**
ALBION, MICHIGAN



UNION STEEL PRODUCTS CO., Albion, Mich.

Gentlemen: Please send me my copy of the new Palletainer booklet.

Name _____ Title _____

Company _____

Address _____

City _____ Zone _____ State _____

☐ Please have your representative contact me at once.

Circle No. 136 on Reader Service Card for more information

SALES FIELD

Continued

Georgia and Tennessee, and also will cover all textile mills in the North and South.

To better serve the Southeast, **Hercules Motors Corporation** has opened a new factory branch at 400 South Edgewood Avenue, Jacksonville, Florida.

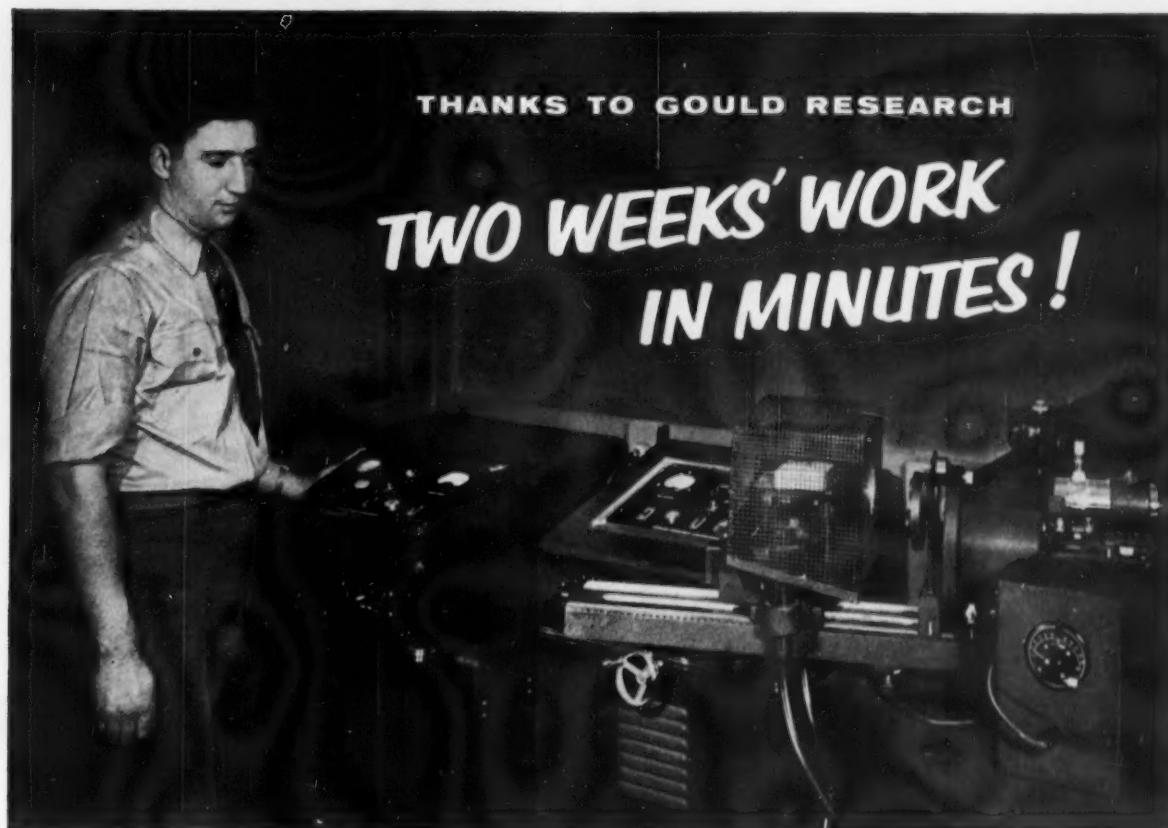


The new branch will serve as a parts warehouse for Florida, Alabama, Georgia and South Carolina. Facilities include a large salesroom, modern offices, complete parts department and fully equipped repair shop.

Raymond Shile has been appointed manager of the new eastern sales office of **Palmer-Shile Company** at 550 Fifth Avenue, New York City. A 1938 graduate of the U. S. Naval Academy, he joined the company as a sales engineer after World War II.

Ralph D. Mount, manager, distributor sales, of **The Bassick Company**, has announced the appointment of **Hamerslag Equipment Company** as distributors in San Francisco. Hamerslag will carry a complete stock of Bassick casters at its San Francisco warehouse, located at 45 Elmira Street.

Hinde & Dauch Paper Company has appointed **Ralph E. Jaret** executive assistant to **John B. Wyatt**, vice president in charge of eastern division sales.



THANKS TO GOULD RESEARCH

**TWO WEEKS' WORK
IN MINUTES!**

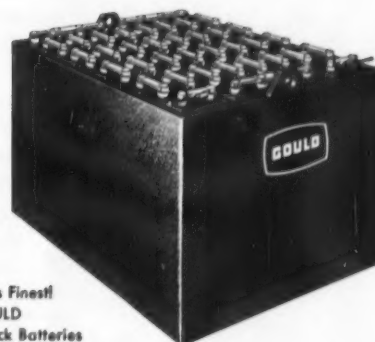
ONE REASON WHY YOU GET BETTER BATTERIES FROM GOULD

The Spectrograph pictured above makes as many alloy analyses in minutes as a chemical laboratory can produce in weeks . . . reveals traces of impurities in quantities as small as .0001%!

It is one of the most important and useful instruments in the great Gould Battery Research Laboratory at Depew, N. Y.

Thanks to this and a host of other research instruments, Gould plates are virtually free from impurities . . . give extra months of service . . . provide top performance and longer trouble-free life. Thanks to research, you get better batteries from GOULD!

"BETTER BATTERIES THROUGH RESEARCH"



America's Finest
GOULD
Industrial Truck Batteries

Always Use Gould-National Automobile and Truck Batteries

GOULD

Batteries

■ GOULD-NATIONAL BATTERIES, INC.
TRENTON 7, N. J.

©1955 Gould-National Batteries, Inc.

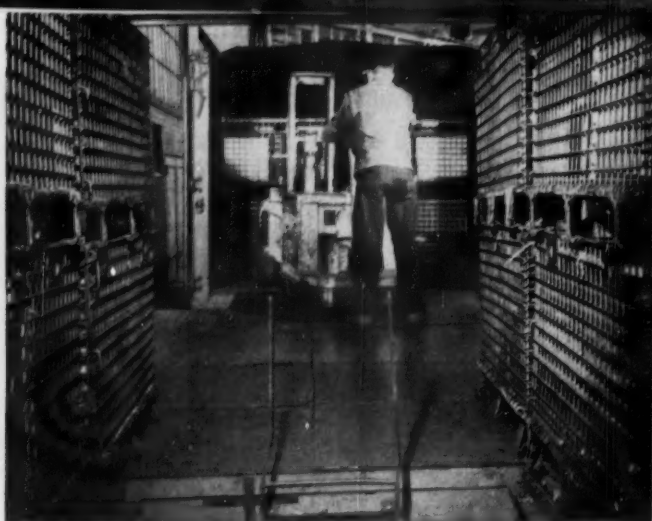
Circle No. 98 on Reader Service Card for more information

FEBRUARY, 1955

63



1. Packed for Shipment—Plastic circuit breaker bases and covers are laid on cardboard trays stacked 11 trays to a Cargotainer at the Westinghouse Electric Corporation's Feeder and Service Division at East Pittsburgh. Cost of \$150 per day has been eliminated, as compared to handling method previously used.



2. Loaded for Shipment—Hoisted onto conveyors and rolled down to the shipping platform, Cargotainers are mechanically loaded 2-high in trailers for 40-mile trip by contract hauler to the Corporation's Standard Control Division plant at Beaver, Pa. Use of Cargotainers has reduced breakage from 17% to practically zero.

Westinghouse saves \$57,697 per

Westinghouse solved industry's problem of down-time due to blown fuses and damage resulting from improper fusing by introducing the AB "De-ion" Circuit Breaker in 1928. Since its introduction, this product has been gradually replacing the switch-and-fuse because of several distinct advantages. It is

tamper-proof, repetitive and reliable. When an electrical circuit is overloaded, the breaker automatically shuts off the power. Power can be restored merely by flipping the handle.

Because of the demand for Westinghouse circuit breakers and other devices to start, stop, control and protect electrical equipment, the manufacturing operations have grown in recent years from a small department in the Corporation's East Pittsburgh plant to a new plant at Beaver, Pa. with 490,000 square feet of floor space known as the Standard Control Division.

This expansion developed some costly handling of materials. For example, the plastic bases and covers for circuit breakers are molded in one department at the East Pittsburgh plant, moved to another for conditioning, then packed for the 40-mile haul by trailer truck to the Beaver plant for assembling and shipping to customers.

In 1947 a sales engineer from Pittsburgh Steel Products Company made a proposal to management of the Beaver plant showing the advantages of Cargotainers for

handling this job.

Cargotainers—the stackable, collapsible, durable, heavy-duty wire mesh (40" x 48" x 24"—2,000 lb. capacity) boxes for moving and storing materials have helped Westinghouse solve its materials-handling problems.

● **Cost Comparison**—Here is a summary of cost comparison between the old and new methods of handling and shipping bases and covers of Westinghouse Circuit Breakers showing an annual savings of \$57,697.80.

These original Cargotainers are still going strong. Today some 8,536 Cargotainers are at work in 16 Westinghouse plants scattered across the country saving money in handling, shipping and storing materials.

Cargotainers are adaptable to all kinds of products from pipe couplings to baby food and can be handled by all types of mechanized equipment such as fork trucks, platform trucks, straddle trucks, or overhead cranes.

They are made in standard sizes or custom-built to any special



5. Storage Space is Halved because Cargotainers are stacked 5-high with ease and safety. Six-hundred unit load Cargotainers are stored to ceiling height of 12½ feet in an area of 5,254 square feet. Cargotainers, when ceilings permit, can actually be stacked 6-high.



3. Unloaded at Beaver—Material is trucked to storage room or directly to one of the assembly lines. Cargotainers have reduced handling operations 95% compared to method previously used. Turn-around time for the trucker has been greatly reduced.



4. On the Production Line—Cargotainers enable operators easy access to plastic bases—help speed production. In handling these plastic parts with Cargotainers, here's how...

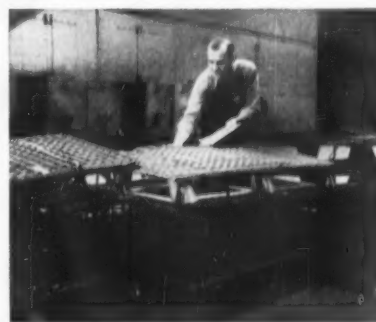
year with Cargotainers®

shape you may require. For complete information regarding Cargotainers and pallets, write for your free copy of "Wire Cargotainers

and Pallets" or ask to have a Materials Handling Engineer call and discuss your problem without obligation.

	Old Method		New Method (CARGOTAINERS)	
	Daily	Annually	Daily	Annually
1. Truck Transportation, East Pittsburgh to Beaver	\$ 3.53	\$ 847.20	\$10.13	\$2,431.20
2. Cost of Containers	150.10	36,024.00	11.56	2,775.00
3. Disposal of Empty Containers	8.00	1,920.00	None	None
4. Cost of 1012E Separator Pad	None	None	5.70	1,368.00
5. Storage of Empty Containers	None	None	8.00	1,920.00
6. Truck Transportation, Beaver to East Pittsburgh (Empty Containers)	None	None	10.13	2,431.20
7. Material Breakage	100.00	24,000.00	Neg.	Neg.
8. Handling Cost	43.23	10,375.20	18.93	4,543.20
TOTALS	\$304.86	\$73,166.40	\$64.45	\$15,468.60

Total Annual Saving: \$73,166.40 - \$15,468.60 = \$57,697.80



6. Returned for Next Trip—Five folded Cargotainers, taking up the same space as one unfolded, are now ready to go back on the finishing line at East Pittsburgh for another load of plastic circuit breaker bases. Many of these Cargotainers have been in continuous service without maintenance for 10 years.

"Everything New But The Name"
Pittsburgh Steel Products Company
a subsidiary of
Pittsburgh Steel Company
 Grant Building • Pittsburgh 30, Pennsylvania

District Sales Offices: Atlanta • Chicago • Cleveland • Columbus
 Dallas • Dayton • Detroit • Houston • Los Angeles • New York
 Philadelphia • Pittsburgh • San Francisco • Tulsa • Warren, Ohio

Pittsburgh Steel Products Co.
 1403 Grant Building, Pittsburgh 30, Pa.

Gentlemen: Please send at once a copy of your free booklet "Duty-Designed Cargotainers."

Name

Title

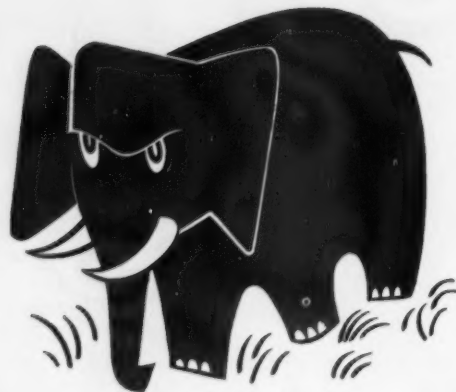
Company

Address

Circle No. 39 on Reader Service Card for more information

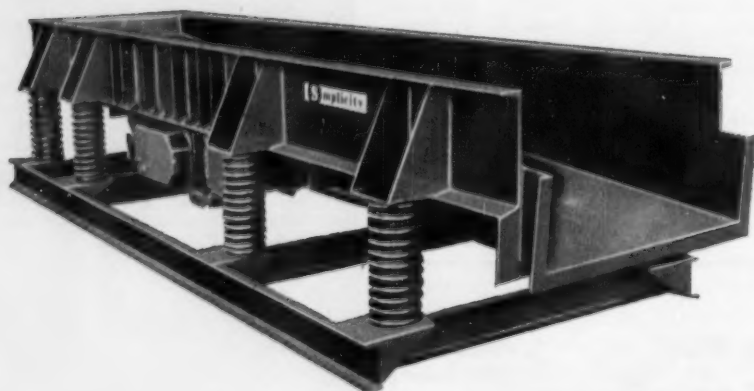
SIMPLICITY

feeders and conveyors are really tough



SIMPLICITY feeders and conveyors with one or two carrying surfaces speed up the handling of materials in mills, factories, foundries, mines and quarries. These sturdy units are built for the rigors of continuous heavy-duty production. The mechanism is extremely simple and easy to get at. Available in widths from 12" to 60", lengths as required to handle most any type of materials. In addition, Simplicity Os-A-Veyor Feeders for use at bins, chutes and hoppers practically eliminate hang-up and bridging because they feed with a vigorous vibratory action from the full length of the bin. For complete details, consult a Simplicity sales engineer or write us today.

2' x 16' Model VS-12 Conveyor



3' x 16' Model OA-10-A Feeder

Sales representatives in all parts of the U.S.A.

147

Simplicity
TRADE MARK REGISTERED

ENGINEERING COMPANY • DURAND, MICHIGAN

Circle No. 103 on Reader Service Card for more information

FACTORS TO CONSIDER WHEN . . .

Selecting a Hoist

WITH any type of material handling equipment proper selection is important to efficiency, safety and long, service-free life. And hoist selection is no exception. . .

The original purchase price of a hoist is almost never a true indication of the unit's final cost. While you may pay less for one type of hoist than for another, varying conditions of use can make its final cost prohibitively high. Therefore, it is vitally important that you have a clear understanding of every factor within your own plant which will affect (and in turn be affected by) your selection of hoists.

1. Heaviest Weight to be Lifted

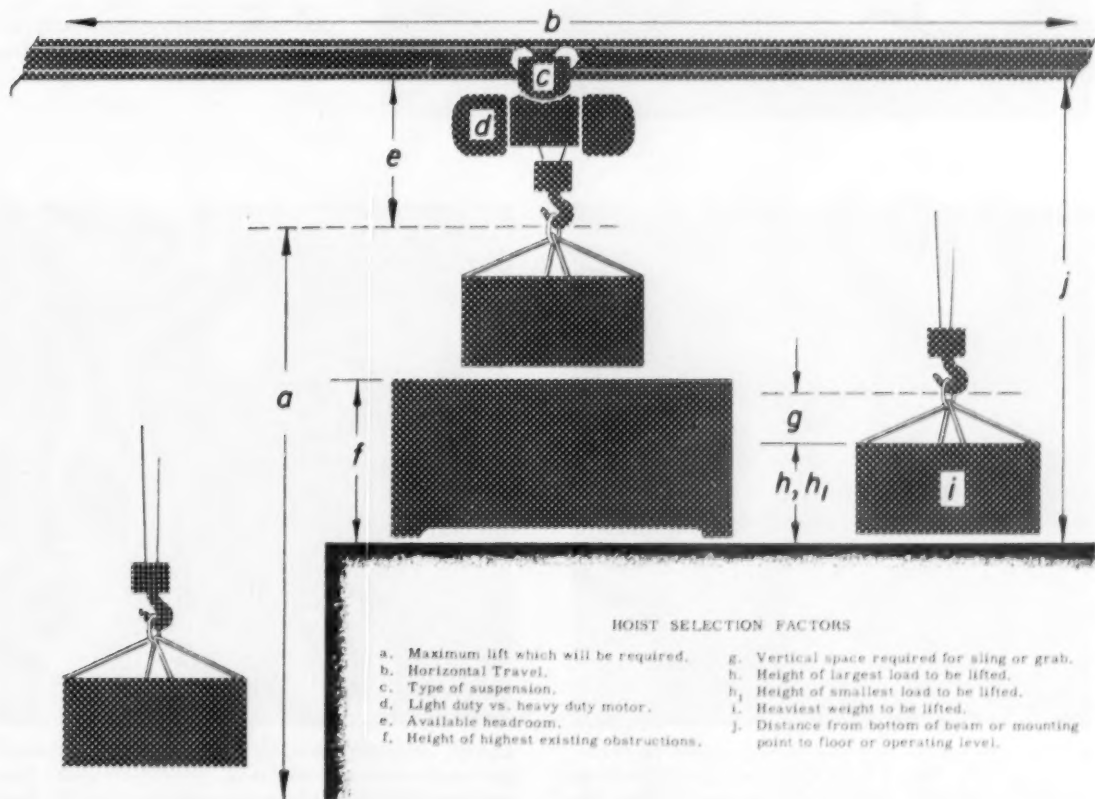
This is one of the most important hoist selection factors. A hoist is constantly being subjected to vary-

ing loads. The maximum load which it must handle is the key to capacity.

A few dollars may be saved in the original purchase price by buying a hoist designed to lift repeatedly all except the heaviest loads it will be expected to encounter. The heaviest load, being lifted occasionally, would overload the unit. Those few dollars "saved" will be lost many times over by excessive maintenance and shortened hoist life which will almost surely result. Furthermore, and perhaps of even greater importance, is the fact that an under-rated hoist virtually invites accidents to property and personnel.

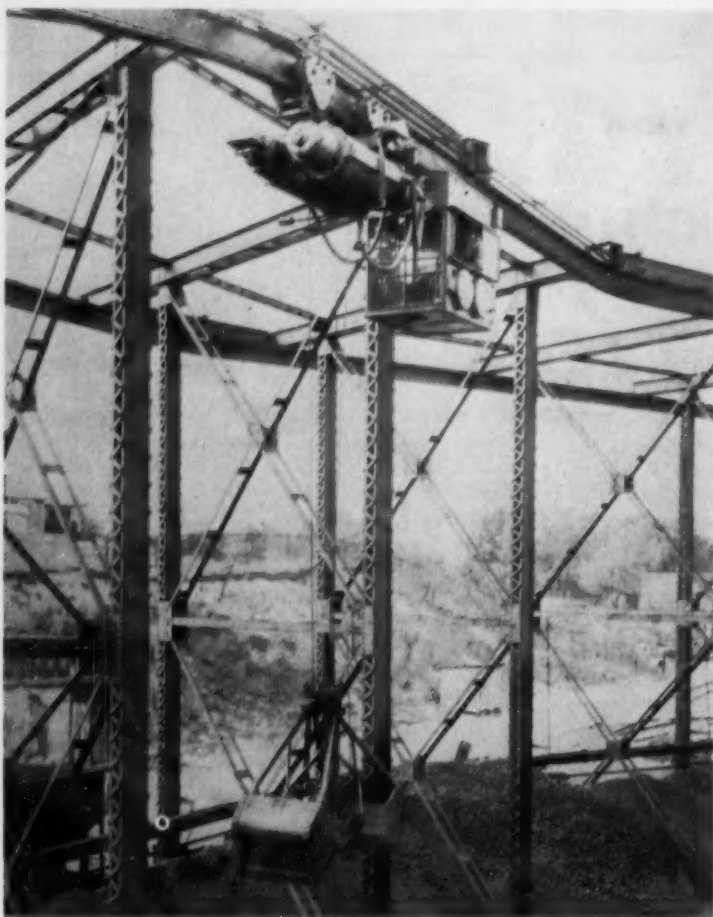
2. Power Supply

If an electric hoist is to be used, a study of the current characteristics in your plant is necessary. Often,



HOIST SELECTION FACTORS

- | | |
|---|--|
| a. Maximum lift which will be required. | g. Vertical space required for sling or grab. |
| b. Horizontal Travel. | h. Height of largest load to be lifted. |
| c. Type of suspension. | h ₁ . Height of smallest load to be lifted. |
| d. Light duty vs. heavy duty motor. | i. Heaviest weight to be lifted. |
| e. Available headroom. | j. Distance from bottom of beam or mounting point to floor or operating level. |
| f. Height of highest existing obstructions. | |



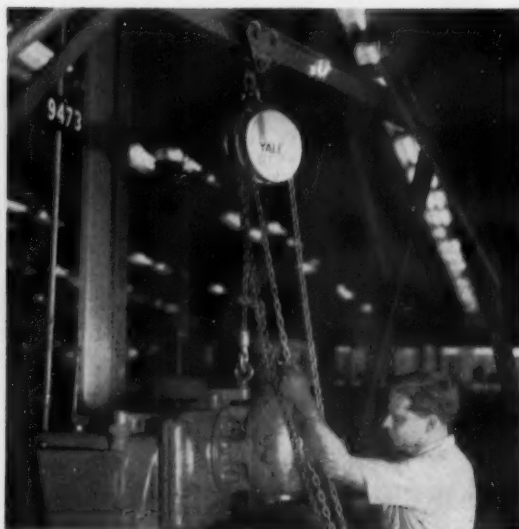
HOISTS

TYPES OF HOIST MOUNTINGS

MOTOR-DRIVEN TROLLEY-suspended hoists are for use where loads must be moved over relatively long distances; where they must be moved frequently; where runways are high above operating floor; where loads are long or bulky; where loads must be moved out over long obstructions.



HOO K SUSPENSIONS are recommended for hoists to be used in several fixed locations. Here, hook-suspended hand chain hoist is used on construction job.



PLAIN TROLLEY MOUNTINGS, manually propelled, are usually for maximum loads approximately two tons, and for installation where runways are close to floor.

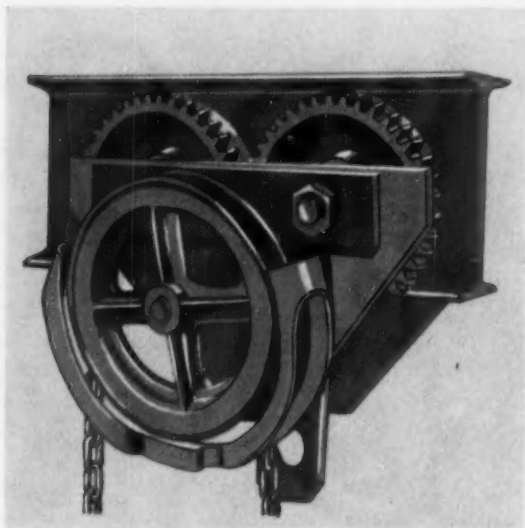
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hoists are moved from one location to another within a plant. Under such conditions it is imperative that care be taken that they be used only on currents for which they have been designed. Hoists are available for almost any current characteristics. Some units are offered with dual voltage motors which can be re-connected within the motor junction box for greater versatility in plants where various voltages are available.

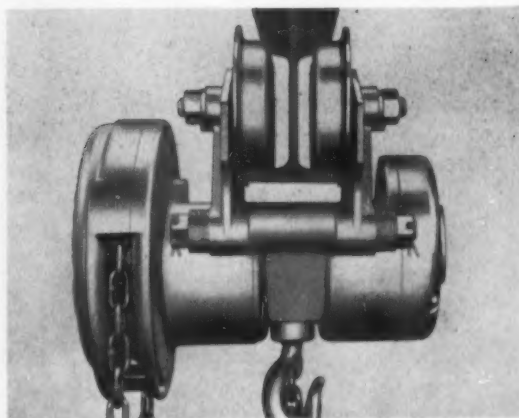
Where light-weight electric hoists are chosen because current is limited to single phase, it must be determined by a check of the line voltage, not only at the junction box, but at the hoist location itself, whether or not adequate voltage is available. Any voltage drop greater than 10 percent on a single phase installation will give unsatisfactory service by slowing up hoist speed or even burning out the motor. It is necessary that voltage checks be made with all motors (including the hoist motor) which would normally be operating at the same time, under loaded condition.

3. Type of Service

Make a careful study of the duty cycle (that is, the number of minutes per hour the hoist can be expected to run at full load). Usually, hoist motors are 15-minute or 30-minute types. A 15-minute motor is one in which the temperature rise does not exceed 55 degrees Centigrade above the surrounding atmosphere after a 15-minute run under full load. A 30-minute motor is one which has a temperature rise of less than 55 degrees Centigrade after a 30-minute run under full load.



HAND CHAIN-PROPELLED TROLLEYS are ideal for use where loads must be spotted accurately but are moved infrequently and over relatively short distances.



RESTRICTED AVAILABLE HEADROOM (distance from bottom of beam to saddle of hook) is a problem facing many users of hoists. Most manufacturers can supply low-headroom trolley hoists, similar to the one above, which operate in minimum vertical space.

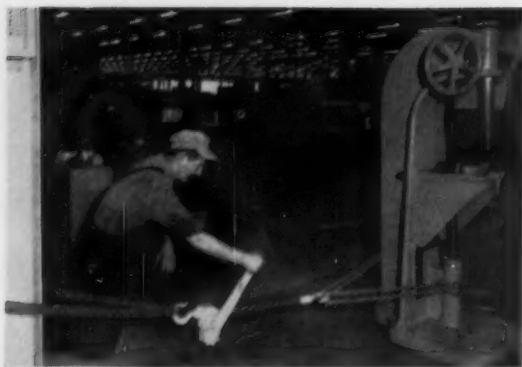
A hoist to be employed for intermittent duty (a few lifts a day), or standby duty (as infrequently as once a week or even once a month), may not require a heavy-duty motor. If a hoist is to get near-continuous operation with a near-capacity load, longer life will result from use of a 30-minute motor.

Particular attention should be given the number, or frequency, of starts of the hoist motor during average operation. Because hoist motors are high starting torque types, greater heating is caused by starting than by running under full load. For operations requiring

(More on next page)



BOLT SUSPENSIONS are used on permanently located hoists and winches with vertical lifts. This provides greatest amount of stability for elevators, etc.



POSITIONING HEAVY MACHINERY is one of many jobs done by ratchet-lever hoists. Other uses include: stretching conveyor belts for repairs, lifting, pulling.



UNLOADING GONDOLA CARS of pipe and rod is done here with a two-ton electric hoist on overhead rail. Motorized trolley permits movement to storage.



SERVICING AND REPAIRING of cars and trucks can be speeded with I-beam-mounted hoists. Cars are simply driven under the beam and are raised to proper

HOISTS

HOISTS FOR ALMOST ANY JOBS...

more than three starts per minute it is recommended that a hoist engineer be consulted.

In those installations where the duty cycle approaches a continuous cycle, the entire problem should be studied by a hoist specialist who can make necessary recommendations after considering such factors as the presence of high ambient heat or extreme cold. Also involved is a study of gear loading; recommendation of controls with time delay and thermal overload relays with appropriate insulation to counteract destructive motor heating.

Where electric hoists are to be used at extremely slow speeds and wherever headroom is ample, consideration should be given to obtaining the slow speed by reeving. That, for example, is how a two-part single reeved one-ton 20-foot lift hoist with a 20 fpm hook speed is con-

work height in short order. This system has great flexibility because the one-ton electric hoists can be moved to any point on the I-beam to suit each repair job.

Continued

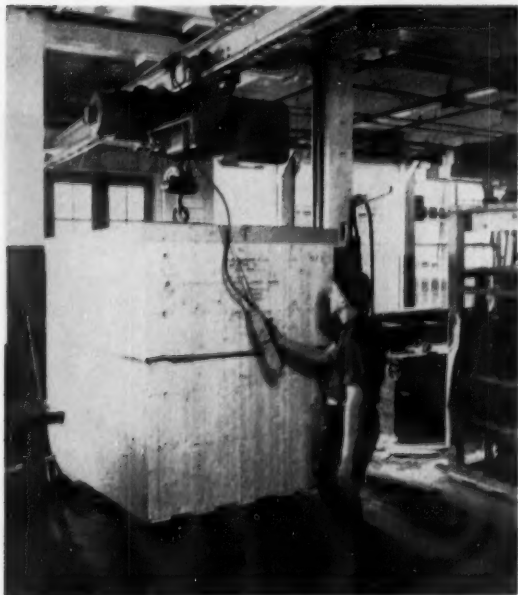
verted into a two-ton hoist with a 10 fpm hook speed. It would then be a four part, single reeved 10 foot lift hoist with a top idler sheave and a double sheave bottom block.

The type of service to which a hoist will be put is an important factor in determining whether to use an electric or a hand hoist. Manufacturers who produce both types generally recommend that if there are more than four lifts per hour an electric hoist should be used. Less than four lifts per hour might indicate that a hand hoist would be more economical, particularly if inching of the load is required.

The type of service for which a hoist unit is intended will also dictate the control of the hoist and trolley motions. Light-capacity hoist units are generally furnished with single speed hoist and trolley motors. In addition to single-speed motors, hoists are furnished with multi-speed slip ring cage and wound rotor motors for more accurate spotting. Some manufacturers' trolleys are furnished with fluid couplings and others with wound rotor motors for smoother acceleration and stopping.

4. Vertical Lift

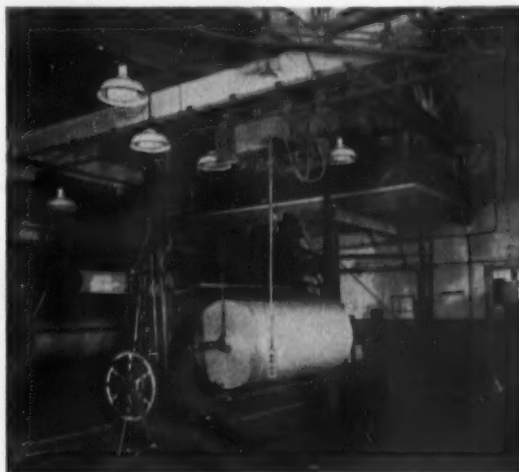
Obviously, you must know how high loads must be raised before you can select a hoist. Hoists are available in various lifts, but generally most manufacturers
(More on next page)



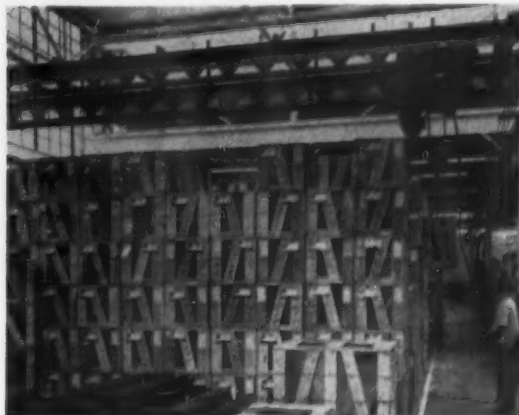
PACKAGING AND SHIPPING of large, heavy machinery can be made more efficient through use of hoist. Lifting lug on unit takes strain off container.



HANDLING SHEETS with this five-ton hoist and sheet grab has increased the efficiency of truck loading. For large, heavy loads like this, a motorized trolley is used.



HANDLING ROLLS of paper is a one-man job when this electric hoist and attachment are used. Note that the attachment is adjustable for various width rolls.



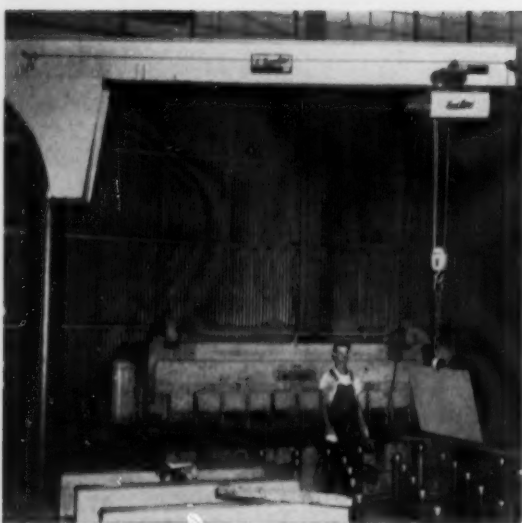
WAREHOUSING activities, too, can benefit from use of hoists. Here, three-ton hoist, with motorized trolley, permits high stacking and complete use of floor space.



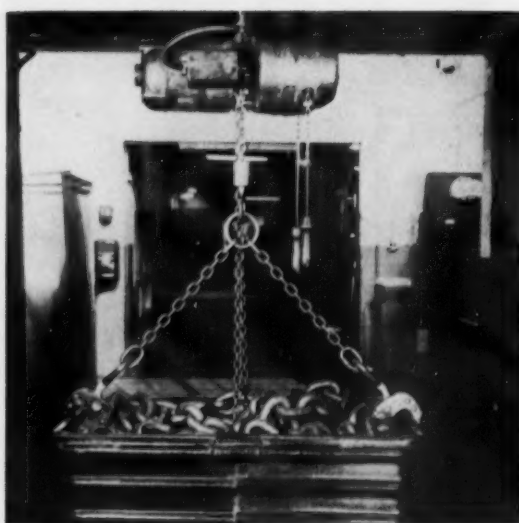
HOISTS

HOISTS ARE ADAPTABLE...

EXTENDED HAND WHEEL can be used wherever safety considerations make it desirable that the operator stand several feet away from the load. Extremely useful for handling bulky loads, foundry ladles or other items which would interfere with or endanger operator at hand chain.



FULL REVOLVING JIB and a two-ton-capacity electric hoist were installed in this plant to serve press.



LIFTING CLAMPS and two-legged chain sling adapt hoist for handling tote boxes of small parts, chain, etc.

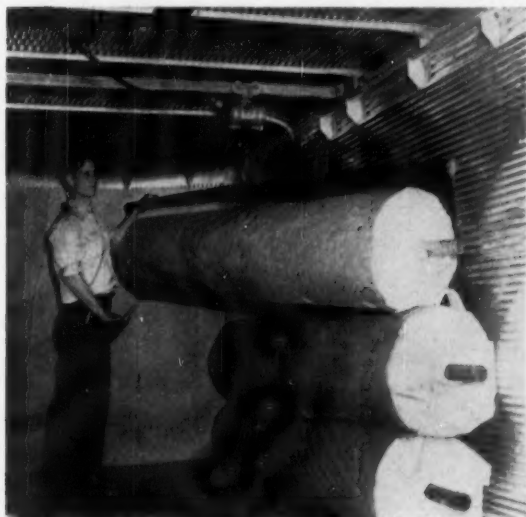
today have standardized on 8 to 10 feet for hand hoists; 10 to 12 feet for light duty electric hoists and over 18 feet for heavy-duty hoists. These are by no means confining limits as units are available with unlimited lift for special applications.

Vertical lift is, of course, dependent to a large degree upon the vertical space which is available throughout the operating cycle of the hoist. That would include the following considerations:

- a. Height of the bottom of the beam or mounting point of the hoist above the floor or operating level.
- b. Height of the largest load which the hoist will be expected to handle.
- c. Height of the smallest load which the hoist will be expected to handle.
- d. Vertical space which will be required for a suitable sling or grab to handle loads.
- e. Height of existing obstructions over which loads must be moved.
- f. Available headroom . . . that is, what is the vertical distance between the lowest overhead point (bottom of the beam) and the saddle of the hook when it is in its uppermost position?
- g. Maximum lift which will be required. This would take into consideration factors such as pits into which loads must be deposited, etc.

4. Type of Mounting

Hoists are available with a variety of mountings, including hook, bolt, plain trolley, gear trolley, or single or variable speed motor-driven trolley. The following recommendations will help you select the proper type



HALF-TON AIR HOIST has been adapted for use by trucker to unload heavy bolts of cloth from truck trailer.

of mounting for your particular operation:

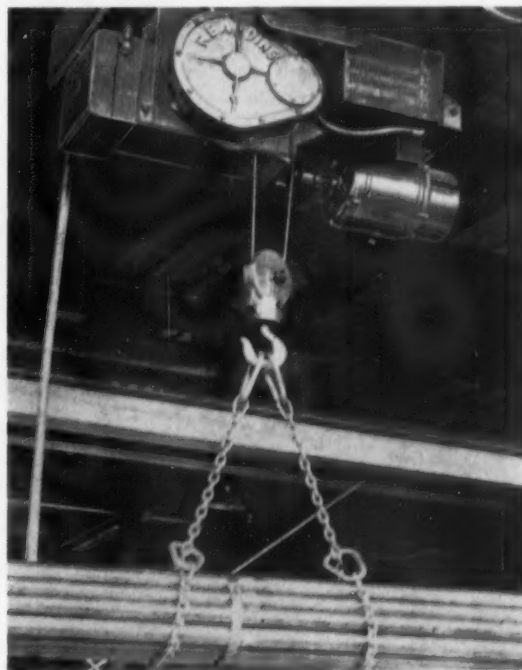
- a. For permanent locations with vertical lifts, use bolt suspended hoists or winches. These provide the greatest amount of stability for such installations.
- b. Where the hoist must be moved from one stationary location to another, hook suspensions are recommended.
- c. Use plain trolley mountings for maximum loads of approximately two tons when overhead runways or beams are fairly close to the operating floor.
- d. When loads must be spotted accurately but are moved infrequently, hand chain propelled (geared) trolley suspended hoists are usually best suited.
- e. Motor driven trolley suspended hoists should be used when loads must be moved frequently, when runways are high above the floor, when loads must be moved out over long obstructions or warehouse stacks, or where the load itself is long or bulky.

5. Horizontal Travel

What is the horizontal travel, if any, and how often does it occur within an hour's time? Answers to these two questions are of importance since they influence the number of lifts possible at either end of the horizontal travel in the course of an hour.

They are also important factors in determination of

(Continued on page 102)



CHAIN SLINGS can be wrapped around bundles of pipe and other long lengths for quick, simple hoisting.

How the Marshall Plan Contributed to Handling at **PONTEDERA**



THE production story behind this success is simply American tools and American processing, combined with as much material handling equipment as the Italians could muster.

Prior to the war, the great plants of Europe were exponents of the mechanized movement of mass produced articles, but the small plants continued to use back-breaking "hand power". While European labor is cheap, it is often also slow. The lesson learned at the Piaggio Scooter Plant at Pontedera, Italy, was the speed and tirelessness of mechanical handling, which many of the new plants will now consider when setting up manufacturing.

Since 1924, Piaggio & C. of Genova manufactured aircraft engines, but during World War II Genova was demolished. Not long afterwards, however, the determined little company was back in business—this time in a town called Pontedera. Beginning over again in a town which had no buildings suitable for manufacturing, all the company had to call upon was a nucleus of skilled workers, and that's exactly what it started with. Even a product had to be decided upon. So this time the knowledge and skill developed in the aircraft engine plant was put to work, and a new product was developed—an outboard motor called the Moscone. A companion line of motor scooters, the Vespa, soon took over most of the manufacturing facilities.

First Units "Hand-Made"

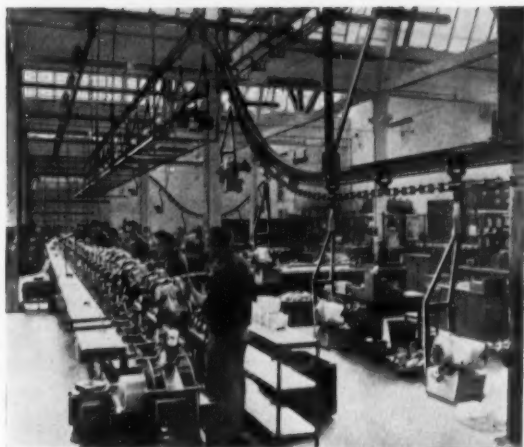
Today, the Piaggio Scooter Plant stands as one of

the newest and most modern plants in Europe. And yet, in 1946 when the first motor scooters were manufactured, they were practically hand-made. By the end of that year more than 2500 units had been turned out, and the demand for additional scooters was mounting. The popularity of the units could be attributed to the low purchase price of \$400, with payments spread over a 24 month period, and the economy with which they could be operated. A typical scooter can carry more than 700 pounds and gets almost 80 miles per gallon.

When Marshall Plan funds were made available, a new building went up at Pontedera, and machine tools, presses and material handling equipment began pouring into the Italian plant. Once set up, this equipment comprised an assembly line which compares favorably with many in the United States.

Modern Assembly Line

Production begins in the small tool department where component parts are manufactured and placed in steel boxes, which are subsequently transferred to the sub-assembly point. Here, automatic "chain production" takes over. This can be in the form of anything that moves, as various fixtures carry along assembly lines small sub-assemblies. The motors that power some of the lines are on mobile carts, so that there is no trick to changing the location of the lines. The engine line advances on one of these mobile lines and gathers parts to the finish, where they are tested before assembly.



COMPONENT PARTS are received in steel bins at this station, engines assembled, placed on conveyor.



COMPLETED ENGINES are taken from conveyor chain at this station and tested thoroughly before mounting.

There is the merry-go-round type that is used for the paint line and later for final assembly. This paint line is as modern a piece of material handling as there is in Italy. Semi-assembled pods come from sub-assembly on overhead conveyors and are lightly clamped to the three-wheeled conveyor fixtures which are tied together with the belt that engages the dual tracked center wheels.

Masked, after inspection, the pods advance through the closed automatic paint booth of six stations. Inspected and spotted as they come from the booth, the fixtures carry the painted pods to an infra-red tunnel. Cooled on emerging, the pods get final touch-up and baking before the chrome is attached. Then, the painted pods are hung on the overhead conveyor for transportation to the finish line.

Most of the smaller parts, including accessories, as well as wheels and steering assemblies, are stacked in the center of the merry-go-round, thereby introducing

a replenishing problem. That is solved by individual parts being handed across the traveling line when required during operations and by breaking the line during shift changes for easier placement.

From final assembly the majority of the Vespas are wheeled away to shipping docks for local or Italian shipments. Thirty percent of production goes out of the country, and must go through a demounting sequence. Front wheels and steering assembly are placed on the bottom shelf of the fixture which transfers to the shipping conveyor. Here, knocked-down crates, ready for assembly, are secured about the scooters and they are ready for shipment.

Piaggio has licensed plants in production in France, Germany, Spain and England, and there is some possibility that a plant may be licensed in the United States. In the meantime, the firm's best foreign customer is a mail order and retail chain in America which sells the scooters under its own name.



CIRCULAR TRACK carries masked scooter frames through paint booth comprised of six various stations.



CRATING PROCESS is final step in this modern Italian factory. Thirty percent of output is exported.

A Simplified Method for Accurate

Calculation of Warehouse Volumes

By Halden L. Lewis, Project Engineer

Corning Glass Works

DETERMINATION of total warehouse building area and volume for any given requirement is usually difficult because we don't know the structural volume required over and above the physical volume of the items to be warehoused.

It is not hard to determine the physical volume of items to be stored. The difficulty is in the establishment and application of correct increase factors to this basic volume so that total warehouse area, working head room and volume can be determined.

Here is a method using *Increase Factors (IF)* which—if properly evaluated—can serve to determine total warehouse building area and volume. It is only necessary to multiply the basic requirements by the correct composite *IF* to arrive at reasonably accurate total.

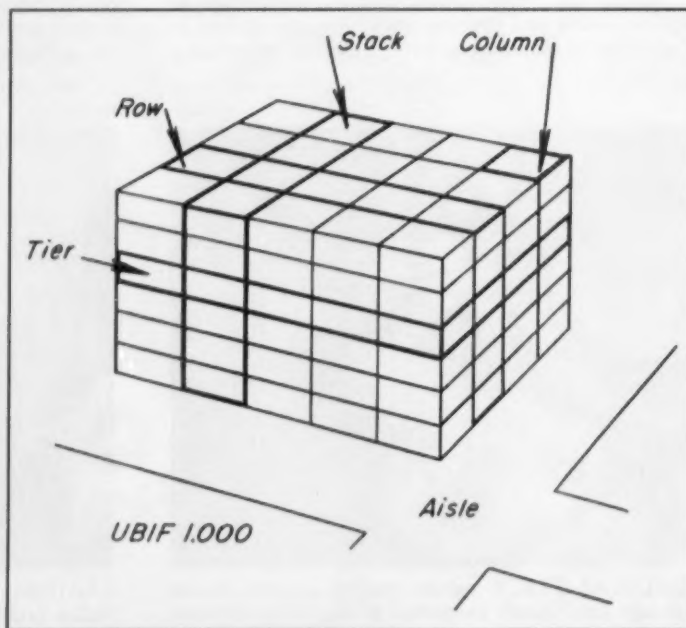
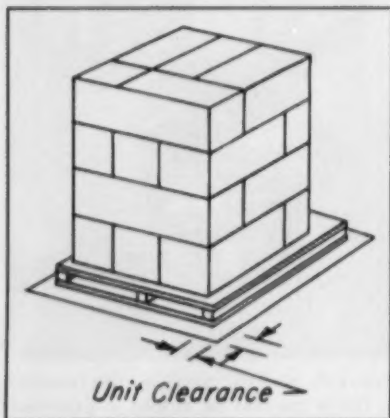
I. Warehousing Elements

First, it is advisable to set up definitions for the warehousing elements customarily encountered. The following seem adequate and not to conflict greatly with previously published data.

- a. **Warehousing Unit** (Figure 1): This may be an item, if it is sufficiently large, or a group of items in the form of a unitized load.
- b. **Tier** (Figure 2): Layers of units, one unit high, several of which form a column, stack, row or block.
- c. **Course**: If desired, an expansive tier may be further subdivided into courses one stack or one row in width.

FIGURE 1: (below) Warehousing Unit may be either a large, individual item or a unitized load. Horizontal unit clearance is translated into "UCIF."

FIGURE 2 (right): Definitions of elements in Uniform Block.



- d. **Column** (Figure 2): Two or more units tiered on top of one another.
- e. **Stack** (Figure 2): Two or more columns in back of one another.
- f. **Row** (Figure 2): Two or more columns beside one another.
- g. **Rack**: Wood or metal framework upon which units are placed. Shelves are considered to be specialized racks, of metal or wood, with solid horizontal supports to hold smaller containers or other units being warehoused.
- h. **Bin**: Partially enclosed container used either singly or in groups and usually open in the front.
- i. **Block**: Any uniform combination of the above elements such as in Figs. 2 and 3.
- j. **Pile**: Bulk material not confined by containers or bins.
- k. **Material Handling Accessories**: Pallets or skids which may be combined with racks, bins or containers.
- l. **Material Handling Equipment**: Hand or power operated trucks or conveyors.
- m. **Working Head Room** (Figure 3): Maximum height to which the warehouse may be filled after all allowances have been made for the use of mechanized handling equipment, sprinkler regulations and/or structural interferences.
- n. **Clear Head Room** (Figure 3): Maximum average distance from floor to lowest common interference. Clear head room may be more or less than this in localized areas.

II. Basic Area and Volume

a. **Basic Area**: This is the total area actually physically covered by the units being considered and does

not include area allowances for handling and storage. It is determined by reducing the quantity of units being considered to the required number of columns. (See item No. 6 of *Tabulation A*.) If racks, shelves or bins are used, the basic area is determined by their dimensions and not by the units being warehoused.

b. **Basic Volume**: This is the total volume of the units being considered, with no volume allowances for handling or storage. (See item No. 9 of *Tabulation A*.) If racks, shelves or bins are used, the basic volume is determined by their volume and not by the material warehoused.

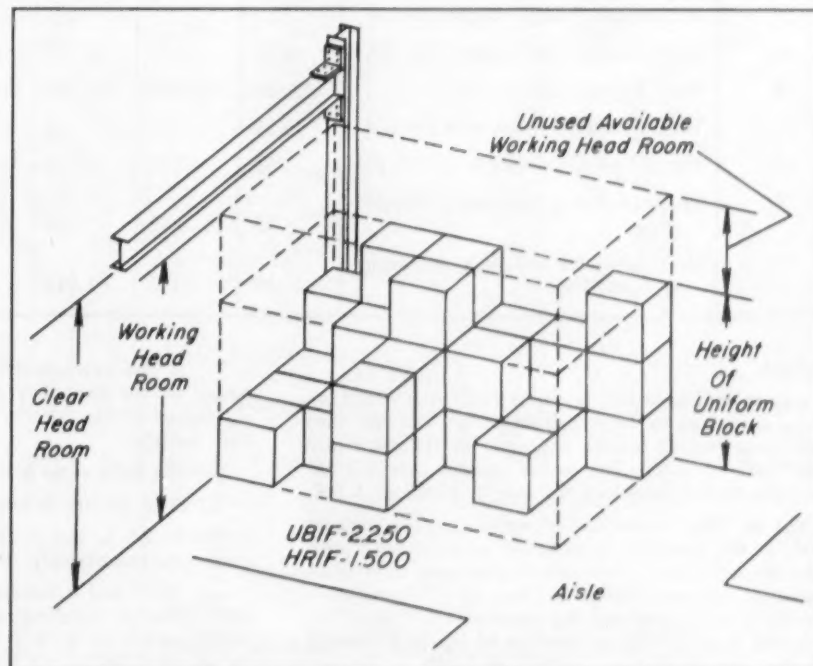
A method for approximating the basic volume is based on a knowledge of the total dollar value of the items to be warehoused and their average dollar value per cubic foot. Care is necessary to insure the use of retail, wholesale, manufacturer's selling price, or standard cost values for both the total dollar value and the average dollar per cubic foot. It is possible to make this calculation as accurate as a volumetric study of the items to be warehoused. An additional advantage is that it can be used more freely than volumetric studies, in planning operations, when proper allowances are made for changing values.

III. Increase Factors (IF)

a. An **IF** may be considered as an abstract number used as the multiplier of a predetermined area, head room or volume to arrive at a part of or the total warehousing requirement. Actually it represents the percentage increase in area, head room or volume necessary to provide for one or more of the following warehousing factors which make up the total volume of the warehouse.

(More on next page)

FIGURE 3: Active Block shows elements from which "IF's" relating strictly to storage units are derived. High "IF" results when miscellaneous units, turned a number of times per month, are warehoused without racks, shelves or bins, a typical operation in industry.



WAREHOUSE VOLUMES

Continued

b. There are five individual *IF*'s and one Composite *IF* involved in the determination of the total warehousing requirements. They are as follows:

1. Horizontal Unit Clearance (*UCIF*)
2. Vertical Material Handling Accessory (*MHIF*)
3. Vertical Deviation from Uniform Block (*UBIF*)
4. Vertical Unused Available Working Head Room (*HRIF*)
5. Horizontal Aisle and Access (*AAIF*)

6. Composite. This is the product of two or more of the above first five. (*COIF*)

It may be possible to break warehousing requirements down into more factors for special applications, but this breakdown is sufficient for most purposes.

c. Each *IF* is applied to two separate considerations. This is shown in *Tabulation B*, where the *IF* in columns 3, 4 and 5 are broadly referred to as Area Increase Factor (*AIF*), Head Room Increase Factor (*HIF*), and Volume Increase Factor (*VIF*). Horizon-

TABULATION A

Determination of the Basic Area and Volume

1 ITEM	2 WAREHOUSING AREA & VOLUME FACTORS	UNITS TO BE WAREHOUSED				7 Basic Area & Volume Totals	8 Avg. VIF
		3 Tote Boxes (a)	4 Skids (b)	5 Regular Pallets (c)	6 Special Pallets (c)		
1.	Quantity of Warehousing Units	1,660	840	2,850	1,690		
2.	Warehousing Units/Column	3	1	2	2		
3.	Columns Required	555	840	1,425	845		
4.	Warehousing Unit Area Dimensions (Ins.)	41 x 52	52 x 52	42 x 52	42 x 52		
5.	Warehousing Unit Area, Sq. Ft.	15.66	18.78	15.17	15.17		
6.	Basic Area, Sq. Ft. (d)	8,680	15,780	21,620	12,820	58,900	
7.	Warehousing Unit Height (Inches)	37.0	51.5	42.0	54.0		
8.	Warehousing Unit Volume, Cu. Ft.	48.28	80.59	53.08	68.25		
9.	Basic Volume, Cu. Ft. (e)	80,100	67,700	151,300	115,300	414,400	
10.	Unit Clearance all around (Inches)	2.25	8.0	3.0	3.0		
11.	Horiz. Unit Clearance IF (<i>UCIF</i>) (f)	1.200	1.710	1.275	1.275		1.381
12.	Mat'l Handling Accessory Height (Ins.)	5.5	8.75	6.0	6.0		
13.	Vert. Material Handling Accessory IF (<i>MHIF</i>) (g)	1.149	1.170	1.143	1.111		1.140

NOTES:

(a) In this example, a "Tote Box" is a wood or metal container having a built-in pallet. The fact that these are easy to handle accounts for the relatively low *UCIF* of 1.200. The pallet section uses 5.5" in addition to the height of the unit, a *MHIF* of 1.149.

(b) A "Skid" is a wood or metal sled-like support that, in this example, is assumed to be loaded with odd shaped metal parts which overhang both sides and ends and are difficult to "true up". This accounts for the 8" clearance and the resulting *UCIF* of 1.710. The skid is 8.75" high in addition to the 51.5" height of the unit, producing a *MHIF* of 1.170.

(c) In this example the pallets differ only in the height of the load they carry. This accounts for the difference in the *MHIF*. The *UCIF* is the same for both pallets.

(d) The Basic Area is the product of items 3 and 5.

(e) Basic Volume is product of items 1 and 8.

(f) If *W*, *L* and *c* represent width, length and clearance respectively, the *UCIF* equals $(W + c)$

(g) If *H* and *h* represent the height of the unit and material handling accessory respectively, the *MHIF* equals $H + h / H$.
 $(L + c) / WL$

tal *IF*'s apply to area and volume, and vertical *IF*'s apply to head room and volume. All *IF*'s apply to volume because volume is affected by any increase in area or head room.

d. Each *IF* is examined separately in the following definitions and derivations:

1. Horizontal Unit Clearance IF (UCIF), Figure 1: Allow a distance all around the warehousing unit which will take care of handling clearances and anticipated building column interferences. In the determination of this *IF* the building size, shape and column interference must be given careful consideration.

Three inches all around a unit of 42 x 52 inches represents an area and volume increase of 27.5 percent, or a *IF* of 1.275. In the example shown in column 4 of *Tabulation A*, a skid difficult to "True up" requires an *IF* of 1.710.

With reference to Fig. 1, it is seen that where the pallet is larger than the base of the load, pallet clearance determines *IF*. If the load overhangs the pallet, or if there is no pallet involved, the load determines the *IF*. It should be noted here that a given clearance for a small pallet will result in a higher *IF* than the same clearance applied to a larger pallet.

2. Vertical Material Handling Accessory IF (MHIF): Express the vertical height of the Accessory as a percentage increase in the height and volume of the warehousing unit. A pallet 6 inches high placed under a load 54 inches high is an increase of 11.1 percent in the height of the load making up the warehousing unit. This is an *IF* of 1.111. An 8½ inch high skid represents an *IF* of 1.165 in the height and volume of a similar unit.

Note that a lower load will have a higher *IF* than

(Continued on page 104)

TABULATION B

Determination of
the Total Warehouse
Area Working
Head Room and
Volume

NOTES:

Elements obtained from *Tabulation A*:
(a), Col. 7, item 6;
(b) Col. 7, item 9;
(c) Col. 8, item 11;
and (d) Col. 8, item 13. (e) "Use" Efficiency is determined by dividing unity by the various Composite *IF*'s and expressing the quotient in %.

1 NO.	2 WAREHOUSING AREA & VOLUME FACTORS	3 AREA & AIF	4 Height & HIF	5 Volume & VIF
1.	Basic Area, Avg. Stacking Height and Basic Volume	58,900 (a)	7.04'	414,400 (b)
2.	Horizontal Unit Clearance IF (UCIF)	1.381 (c)		1.381 (c)
3.	Vertical Material Handling Accessory IF (MHIF)		1.140 (d)	1.140 (d)
4.	Vertical Deviation from a Uniform Block IF (UBIF)		1.66	1.66
5.	Vertical Unused Available Working Head Room IF (HRIF)		1.35	1.35
6.	Horizontal Aisle & Access Area IF (AAIF)	1.41		1.41
7.	Composite IF (COIF)	1.947	2.555	4.974
8.	"Use" Efficiency (e)	51.36%	39.14%	20.10%
9.	Total Warehousing Area, Working Head Room and Volume	114,700	18.00'	2,061,200
10.	Additional Areas			
	Receiving	2,100		
	Shipping	3,200		
	Order Preparation	2,000		
	Packing	1,600		
11.	Grand Total Area	123,600		

COST CUTTING IDEAS . . .



TRUCKS SAVE \$9000 YEARLY

A savings of \$9000 a year has been realized by Solo Cup Company, Chicago, since the installation of three fork trucks. More than 200,000 pounds of material is handled daily by the fork trucks, which do not work on a set pattern. The entire operation of the warehouse revolves around the use of the trucks and the efficient manner in which they load, unload, transport and stack the raw and finished products. An example of time-saving through the use of the trucks is demonstrated in the unloading of paper rolls from a semi-trailer. The truck performs the unloading and stacking job in 45 minutes, which formerly required two men a minimum of three hours.

PACKAGING QUADRUPLED

A carefully-planned system of packaging at Firth Sterling Inc., Pittsburgh, has eliminated practically all manual handling, requires less strapping equipment, and has made possible the packaging of four times as many orders. Formerly, cartons were packaged at individual benches located throughout the department. Orders were packaged for shipment only when received, and the flow of work was quite uneven. A power belt conveyor was installed with packaging tables located beside it, and a central strapping station was established. Orders packed at each table are moved by the belt to the strapping station. Roller conveyors serve as storage space prior to strapping.



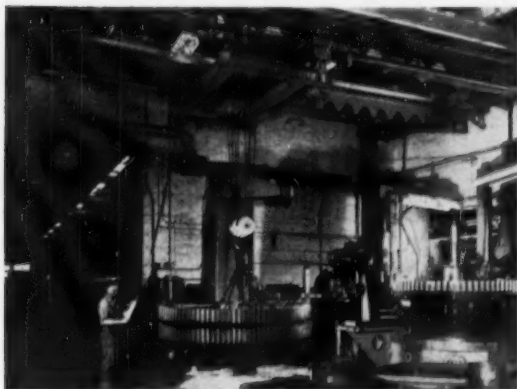
CYLINDER HANDLING SIMPLIFIED

Handling cylinders 30 inches in diameter, 82 inches long and weighing more than a ton-and-a-half each formerly presented a real problem for the Moreland Chemical Company of Spartanburg, South Carolina. Then the company purchased a relatively inexpensive modified hydraulic hand lift pallet truck which makes the handling of cylinders by one man an easy and quickly accomplished job. Forks on the truck are 82 inches long, 9 inches wide and are formed in an inverted "V" which serves to cradle the cylinder when the forks are raised. Advantages realized were: small capital investment, elimination of worker strain, and quick and easy handling of an unwieldy object.

COST CUTTING IDEAS . . .

24,000 COKES AN HOUR

Further paring of costs in soft drink bottling was accomplished by the Coca-Cola Bottling Company, San Bernardino, California, with an automatic pallet loading machine. The machine can palletize or depalletize up to 1000 cases per hour. After filled bottles are cased, they move by conveyor to the pallet loader and are stacked to a predetermined height of 4, 5, 6 or 7, then ejected as a stack to the accumulator. An arm slides the cases onto the pallet which is moved by roller conveyor to be picked up by a fork truck and transported to storage. Empty pallets, placed in position by a fork truck, are automatically fed into the machine, thus permitting continuous operation.



CRANES EXPAND OPERATIONS

Push-button control of loads up to ten-tons has enabled Verson Allsteel Press Company, Chicago, to expand substantially its gear cutting operations. Two cranes, with a ten-ton capacity each and a combined span of 69 feet, give complete bay coverage. The cranes serve seven vertical boring machines and are in continuous use handling a variety of press components, ranging from small parts up to gear blanks of 120 inches in diameter. Previously, limited facilities made it necessary to job out much gear cutting work. However, a new plant layout and installation of the overhead cranes has made possible the handling of gear work and other boring operations by Verson.

HANDLING TIME CUT 80 PERCENT

A mechanized material handling program at Waxide Paper Company's St. Louis plant has reduced wax handling time 80 percent, and eliminated hot-weather difficulties. This was accomplished through the use of pallets and fork trucks. The firm waxes and prints paper wrappers for a variety of food products. Bulk wax and other raw materials are stored in a basement area; paper roll stock is stored separately in a main floor area. Previously, it took four men five hours to unload one boxcar. Now, incoming wax arrives palletized in boxcars, and two men with powered trucks, empty, move and store a complete carload of bulk wax in little more than an hour.





POWER SWEEPER in warehouse can clean more than 100,000 square feet an hour in open areas. Main brush throws dirt into hopper; vacuum draws dust into bag.

Mechanical Sweepers ...

They are built to
do a big job for
large & small plants



MANUAL-TYPE mechanical sweeper can be used for a variety of jobs, such as cleaning carelessly-dropped cinders. Cleans up to 20,000 square feet an hour.

BECAUSE it is considered by many plant engineers to fall under the category of good housekeeping, maintaining clean floors and aisles is often overlooked as a factor toward increasing efficiency of rolling material handling equipment. But, regardless of whether for good housekeeping or good handling, the role of mechanical sweepers in keeping floors free of dirt, debris and litter has received sharply-increased attention in the past five years or so.

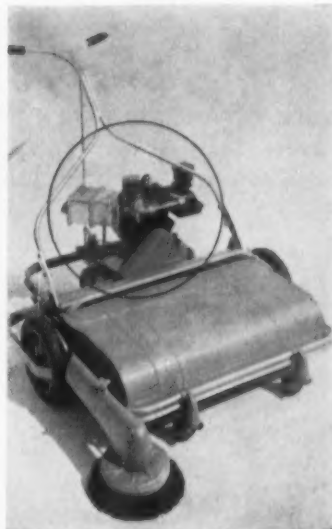
Among the specific material handling advantages which are derived from the use of mechanical sweepers are: (1) better traction for industrial trucks and other powered equipment by removal of sand, grit, dust and other materials which often cause tires to slip; (2) fewer accidents and skids on turns; (3) protection of tires and bearings from needless damage caused by brick fragments, steel chips, grit, sand and similar destructive material; (4) prevention of bumpy build-up in traffic aisles by removal of grit and dirt particles before they have a chance to contact oil spray and heavy traffic; (5) prolonged floor life by helping provide a smooth trucking surface.

When the acquisition of mechanical sweepers is considered, the question most often asked is: How large does a plant have to be before a mechanical sweeper can save money?

Most plants report that size isn't too important—



BRUSH ATTACHMENT on front of sweeper affords this tobacco warehouse double profits. Now, floors are cleaned faster, more thoroughly by one man, and once-discarded leaves are gathered for valuable by-products.



CATALYTIC EXHAUST on this sweeper removes carbon monoxide. Use of the attachment is optional.

that 19 times out of 20, a mechanical sweeper will pay for itself in two to 10 months if aisles are wide enough for efficient operation. And, in some cases, the annual savings from a single unit, including depreciation, runs from \$1400 to \$12,000 a year.

However, studies and research have uncovered a standard of measurement which will help give a definite answer on whether or not a mechanical sweeper is the most economical means of cleaning floors, aisles and other areas. Basically, this general standard shows that mechanical sweeping is economical for any plant having 5000 or more square feet of area which must be swept regularly.

Do Economical Job

But, in some installations, such as garages and machine shops, where extreme sweeping conditions are indicated, sweepers can do an economical job in areas as small as 1000 square feet.

The 500 square foot yardstick is not an inviolable measure. An indication of this can be found in the fact that, from surveys made of on-the-job use, a manual type of mechanical sweeper will do an efficient cleaning job in an area from 15,000 up to 25,000 square feet in one hour, with one operator. This is an average figure, since, as with any type of machinery, production depends upon the operator.

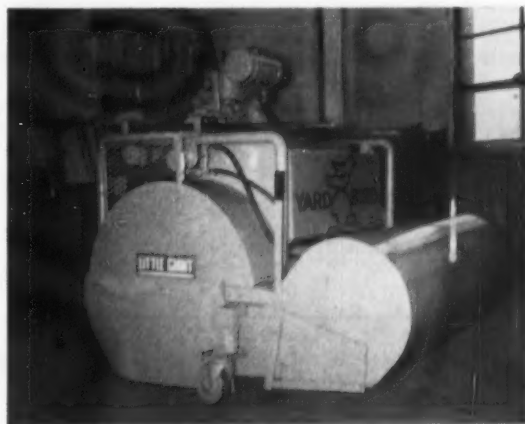
Above the 25,000 square foot figure, research shows greater economy will be obtained if the user switches to a motorized mechanical sweeper. This type equipment will clean up to 50,000 square feet an hour, with one sweeper and one operator.

As a material handling aid, a mechanical sweeper can do much to make safe, fast-trucking "highways" out of plant floors. In a single pass, a good sweeper cleans a path 24 to 50 inches wide, leaving a cleaner

surface than a push broom could ever provide. It picks up such material as dust, foundry sand, nails, chips, steel fragments, sticks, paper, excelsior, debris—in fact, any loose material previously swept up with push brooms. And, if necessary, a sweeper can even pick up sizeable brick, stone and lumber sections, although these should be removed before sweeping, if possible.

Most industrial sweepers are obtained primarily for their labor-saving performance, and, as could be expected, the savings vary widely from plant to plant. The following factors affect the typical savings that a plant may expect: (1) type of soilage on floors;

(Continued on page 98)



FORK TRUCK SWEEPER is mounted on casters and is pushed by the truck. It has a dump bottom, so it can be emptied easily after being lifted by the truck.

Here's how Standard Pressed Steel Company successfully mechanized six inspection centers, each having a different handling problem.

Mechanized Handling Increases Production at Inspection Centers

By John M. Sherman
Manager of Tooling & Quality
Standard Pressed Steel Co.

GREATLY increased productivity of its inspection operations has more than repaid Standard Pressed Steel Company for the extensive mechanization of its quality control centers. The Jenkintown, Pa., concern has almost doubled its volume of threaded fasteners in three years; today has about the same number of people at its final inspection stations as it had three years ago. However, they are inspecting more efficiently and with less manual effort.

These benefits are the result of widespread, intelligent application of mechanical aids—belt and roller conveyors, overhead hoists, rack conveyors, automatic lifts and fork trucks—to just about every inspection station in the 650,000-square-foot plant.

SPS began to overhaul its quality control program five years ago. The first step was to eliminate entirely in-process inspectors, freeing them for production. The company found that its machine operators could better control product quality than outside inspectors. Secondly, it streamlined its final inspection centers. The goal was to eliminate fatigue in handling parts and to free inspectors for maximum actual inspection time.

In three years, these goals were achieved:

1. A marked increase in inspection productivity—more than 100 percent in many cases;
2. Smoother product flow from production through inspection to shipping;
3. Improved quality control inspection.

The initial effort to conveyorize flow has organized SPS inspection to the point where it can be readily automatized in the near future. Future plans include the addition of automatic transfers and packing equipment to boost inspection productivity.

A variety of products led SPS to tackle many varied problems in mechanizing inspection. Each product, each inspection center, presented a different handling problem that was solved with different techniques. The company has mechanized inspection centers that process as few as 10,000 screws a day, as well as those handling a million a day. It has integrated in one center the inspection of both special and mass-produced standard products. Also, SPS found it could conveyorize inspection and tie it in directly with weighing, packing and shipping.

Here's how the company successfully mechanized inspection at six quality control centers, each presenting a different handling problem:

I. Standards and Specials

Final inspection of socket head screws shows how SPS mechanized a center processing both standard and special fasteners. This high-volume inspection station—millions of fasteners flow through here each week—receives cap screws from two separate heat-treating areas. After inspection, the screws move to two separate packing areas.

SPS Achieved these Goals:

- A. MARKED INCREASE in Inspection Productivity.
- B. SMOOTHER FLOW from Production through Inspection.
- C. HIGHLY IMPROVED Quality Control Inspection.



1. STANDARDS AND SPECIALS: Power hoist brings socket head screws from heat treat to final inspection; specials on inside conveyor, standards on outside line.

One heat-treat area processes most of the plant's special socket screws and a large volume of standards. Finished fasteners are conveyed from this department to inspection in tote pans. The second, containing a huge, automatic heat-treat line, processes only standard fasteners which move to inspection in large bins.

Parts from both heat-treat areas come to inspection via separate monorail power hoists. Those coming in tote pans from the first heat-treat area are placed on a double-track roller conveyor table—specials on the inside track, standards on the outside track.

The conveyor track for special socket screws makes a U-turn around a battery of inspection tables. Here, inspectors pull off tote pans as they move by, perform the necessary inspection tests, then put the pans back on the main conveyor to go to the specials packing department. At each inspection station, a section of conveyor permits each inspector, without lifting, to roll the tote pans right up to his work table.

The outside track, for standard socket screws only, branches off to a second battery of tables. Coming into this station also are the large bins bringing socket screws from the automatic heat-treat line. Inspected screws in tote pans move from this station to a manual packing area. Those in bins are moved by fork truck to specially-constructed unloading stands which feed automatic and semi-automatic packaging lines.

2. Bridging the Gap

After final machining of locknuts, they are inspected thoroughly to make certain they are acceptable for plating. The plating room is 500 feet from the machine area, and the unplated nut inspection center is set up half-way between the two departments. In mechanizing this inspection, the most serious problem was scheduling a smooth, uninterrupted flow of inspected parts to an automatic barrel plating line 200 feet away.



2. BRIDGING THE GAP: After unplated inspection, tote pans of locknuts are sent up inclined belt conveyor to overhead gravity roller conveyor for storage.

Formerly, unplated locknuts came in tote pans from the machines in skid loads. Fork trucks set the skids down on the floor next to the inspection table. Inspectors had the double manual effort of lifting heavy tote pans from the skids to work benches, then replacing them on other skids for movement by fork truck to the plating line.

One fork truck had to work full time servicing the nut inspection center. The flow was intermittent and often the plating line was forced to wait for a full skid load of nuts.

SPS remedied two problems—inspector fatigue and scheduling—by installing a U-shaped roller conveyor inspection table and tying it to the plating line with an overhead gravity roller conveyor.

At unplated nut inspection, standard nuts are fed to one end of the U-shaped conveyor table, specials to the other end. An overhead power hoist minimizes the hand lifting of tote pans onto the conveyor. Specials are still hand-lifted to the conveyor, since they represent but a small percentage of this station's volume. After inspection, the pans of nuts are shoved on an inclined power belt conveyor feeding the overhead roller conveyor, which acts as a storage magazine and holds up to 150 tote pans.

At the far end of this conveyor, the tote pans drop down one at a time on a braked power belt conveyor directly to a weigh station at the beginning of the plating line.

With this new set-up, feed to plating is continuous. And, only the part-time services of a fork truck are required to move the nuts from machines to inspection. At the inspection center, mechanical handling aids have all but eliminated work fatigue. Women, adept at this type of inspection, can handle the job without strain.

(More on next page)



3. INTEGRATING OPERATIONS: Skid loads of plated locknuts are on lift platform which keeps top layer of tote pans level with roller conveyor for easy transfer.



4. BUILT AROUND PRODUCTION PROCESS: Inspected aircraft bolts move on roller conveyor to transfer area, are placed in racks, go overhead to plating.

MECHANIZED INSPECTION CENTERS

Continued

3. Integrating Operations

Mechanical aids have doubled the output of final locknut inspection and also tied together inspection, weighing, packing and shipping on an integrated conveyor system. Plated locknuts arrive in tote pans. Before inspection, they are lubricated to prevent galling and thread seizure. To dip into lubricant, locknuts must be transferred to special steel baskets.

Skid loads of locknuts coming from plating by fork truck are placed on a stationary lift platform. The top layer of tote pans is level with the top of the dip basket, and the operator simply tilts the tote pans into the basket without lifting. Emptying the first layer of pans, the operator raises the lift platform to bring the second layer into line.

The loaded basket is then moved by overhead power hoist to a dip tank and then to a centrifuge which spins the nuts dry. The dip line operator doubles as inspector, checking plating thickness and appearance.

This operator then moves the basket of locknuts by power hoist to one of two conveyor lines—a plain roller conveyor for specials, a powered belt conveyor for standards. He dumps the basket—still suspended by the hoist—into tote pans, then shoves the pans onto the conveyor toward the inspection tables. The inspectors work right out of the tote pans on the conveyor.

Six people at this new inspection center can process six million locknuts a week. Before mechanization, the same six people could process only half that amount.

Estimating this added production would require

four more inspectors under the old set-up, SPS figures it saved \$16,000 with \$2000 worth of conveyor and mechanical handling equipment. Also, the inspector's job is much easier and congestion existing when tote pans were stacked ten high in the aisles around inspection tables has been eliminated.

4. Built Around Production Process

Final aircraft bolt inspection is built around an automatic rack plating line. A closed-loop overhead rack conveyor was installed to move bolts from inspection to plating and then on to final inspection.

This inspection center handles a variety of aircraft bolts, all made to military standards and many of which require considerable testing and inspection. Double-track roller conveyor tables with two lanes facilitate processing of both standards and specials.

Tote pans of bolts arrive by fork truck in skid loads from distant parts of the plant. These skid loads are broken down by stock movers who place tote pans on the appropriate track of the roller conveyor. Bolts made on machines adjacent to the inspection center move manually across the aisle in tote pans and go directly on the roller conveyor.

After inspection, the tote pans are run onto a roller conveyor passing under one leg of the overhead rack conveyor. Stock movers insert fasteners in vertical racks which they hang on the moving overhead conveyor. The rack conveyor brings the bolts to the automatic rack plating line. An operator transfers the racks to the plating line and puts plated bolts back on the rack conveyor. SPS plans to install an automatic



5. MECHANIZING MAGNAFLUXING: Tote pans of plated aircraft bolts arrive on roller conveyor, are placed on special conveyor through magnafluxer.

transfer to switch racks automatically between conveyor and plating line.

Rackloads of plated bolts are carried by the conveyor over another straight section of roller conveyor. Bolts are removed from racks by an operator who visually checks the bolts of plating flaws. Rejects are placed in tote pans and sent off one end of the conveyor; accepted bolts are placed in special bake oven baskets and sent along the conveyor in the opposite direction to a final inspection station.

5. Mechanizing Magnafluxing

In its magnafluxing department, SPS mechanized a highly-specialized inspection process. All aircraft bolts are checked for hidden flaws by established magnetic particle inspection techniques. The changeover in this department is at present half-finished. Eventually, all inspection handling will be completely automatized.

Finished aircraft bolts come from the bake oven in trays on special dolly racks to one of five magnafluxing lines. Stock movers break down the dolly loads, placing pans of bolts to be inspected on roller conveyor sections feeding a battery of magnafluxing machines.

The inspector at each line places the bolts on a special conveyor that runs them one at a time through the circular magnafluxer in which bolts are magnetized by a circular field of flux, then sprayed with magnaflux containing metal powder that clings to the surface wherever flaws exist.

After passage through this magnafluxer, acceptable bolts are placed back in trays which the inspector pushes onto a power belt conveyor at the end of each circular magnafluxing machine. Trays are then deposited on a semi-circular roller conveyor section feeding the longitudinal magnafluxing machine. At the end of the roller conveyor, the trays are halted



6. MECHANIZING LOW VOLUME INSPECTION: Job of Rockwell testing is simplified by two sections of roller conveyor. Heaviest lifting is of empty pan.

by an automatic stop that feeds them one at a time, at a predetermined rate, into the second magnafluxing line.

After the longitudinal magnafluxer, the bolts are again inspected for flaws, then returned to trays which are placed on a belt conveyor feeding a demagnetizer and washer. The trays of bolts finally are deposited on a section of roller conveyor.

From this point, the present set-up is considered temporary. The bolts are picked up by hand, fed through a paint spray booth to color code the heads of the bolts, then placed on a roller conveyor feeding the packing line. Most bolts are then tubed in cardboard cylinders to protect the threads and placed in boxes for shipment. These final operations will be completely automatized. The paint spray operation will be mechanized so that magnafluxed bolts can be run directly through an automatic spray booth without additional handling.

6. Mechanizing Low Volume Inspection

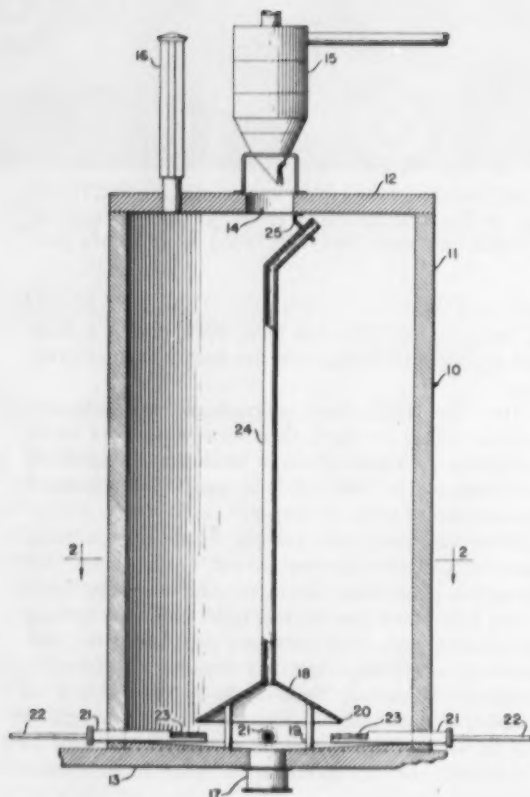
The SPS system for Rockwell hardness testing proves that a low-volume, one-inspector station can get an appreciable boost from conveyorization.

The installation of two five-foot sections of roller conveyor, one on either side of the test machine, have enabled an operator to boost her output by 50 percent without additional effort. Her job is easier now since she can remain seated, need not lift full tote pans.

A stock mover feeds tote pans of screws onto one conveyor section, removes tote pans of tested screws from the other section. The girl simply picks up screws from one side, tests them, then places them in a tote pan on the other side. Rejects are dropped into a tote pan at her side. The heaviest lifting she does is to transfer an empty tote pan from one side to the other.

PATENT REVIEW By Melvin Nord, Patent Attorney

From time to time in these pages, some of the significant new patents related to material handling will be reviewed. The reader can thus keep abreast of the latest developments almost as soon as they're off the drawing boards.



Provides Easy Flow of Sticky Material

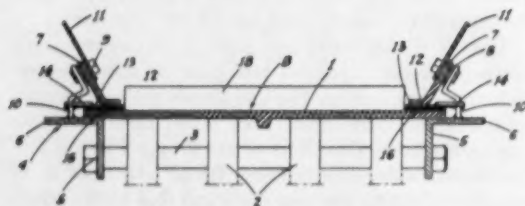
FINE pulverulent material, such as fly ash, is extremely difficult to discharge by gravity from a storage bin of any substantial size. The material becomes compacted in the bin and tends to arch. A solution to this problem is outlined here.

The storage bin (10) has an inlet opening (14) through which a hopper feed (15) discharges to the bin, and a stack (16) is provided to vent air from the interior of the bin. A number of aerators (21) extend through the wall of the bin and project slightly beneath the outer margin of an inverted conical baffle (18). The aerators have porous portions (23) through which the air may pass in order to fluidize that part of the ash surrounding each aerator.

An air venting pipe (24) extends from the under side of the baffle to the top of the bin. Ash stored in the bin is prevented by the baffle from discharging directly into the conduit (17). Hence, arching of ash above the conduit opening is prevented, and avalanching is avoided.

U. S. 2,686,617, issued to Edgar B. Tolman Jr. and Ray W. Williams, assigned to United Conveyor Corporation.

Conveyor Wiper Pads



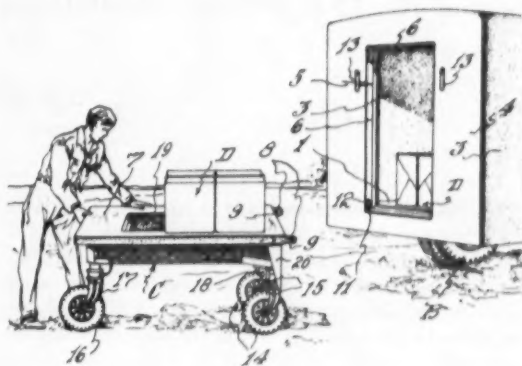
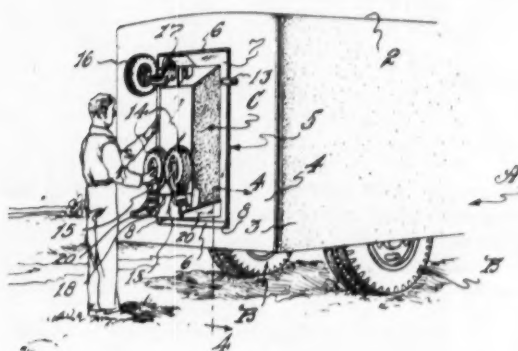
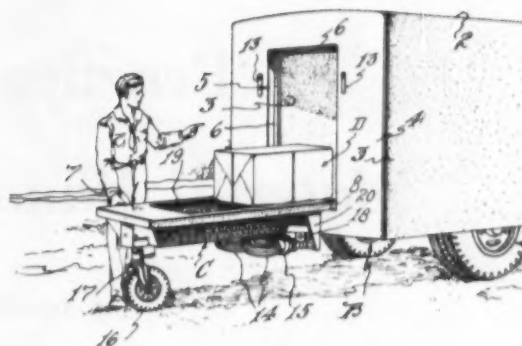
Relatively small wiper pads (16) which are cut from a resilient material and secured with countersunk rivets to conveyor belting (B) effectively sweep clean metallic wear strips (13) which are placed between the lower edges of rubber side skirts (7) and the belt to prevent undue wear between them. These wear strips tend to accumulate dirt which, if not removed, is harmful to the belt.

U. S. 2,685,958, issued to John A. White Jr., assigned to Be-Ge Manufacturing Company.

A Dolly All Your Own

Every truck which has a rear door can have a dolly it can call its own. When the door is closed, retractable wheels (14) are in an out-of-the-way position and permit the door to be swung downward easily to ensure proper contact of the non-retractable wheel (16) with the ground when the plate is to be used as a trailer. This wheel projects from the rear of the truck body to serve as a bumper.

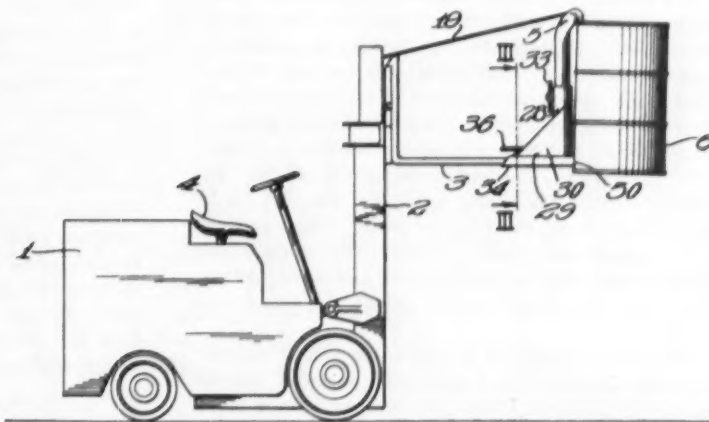
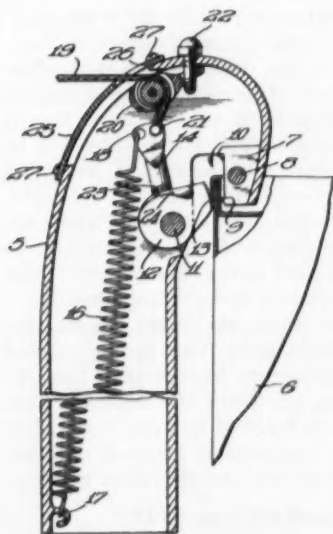
U. S. 2,686,060, issued to Kibbey W. Couse.



Drum Lifter for Fork Trucks

Here's a drum lifting and moving device which may be attached to a fork truck. A hollow hook-shaped column (5) is provided for gripping the top of the drum. The pawl (12) is held in gripping position by a control cable (19) which is pulled by the operator. When not in operation, the spring (16) holds the pawl in inoperative position. In order to release the container from the gripping mechanism, the operator lowers the container to the ground. When the container touches the ground, continued downward movement of the forks (3) will cause upward movement of the rim of the container relative to the pawl, thus releasing the load.

U. S. 2,689,663, issued to Ladd C. Shramek.



A Practical Manual of Material Handling Procedure

Installment 9

Section 10: ANALYSIS OF HANDLING IN THE MANUFACTURING CYCLE

by Robert C. Brady

WHEN raw materials begin to approach the manufacturing cycle, Plant Layout, Tooling, Scheduling, Production Control, Inspection, Supervision, Purchasing, Sales, and other departments all have some share in the allocation of quantities and kinds of materials to be processed as well as the time schedule for the work.

Sales forecasts, order backlogs, historical sales records, spare parts records and any other related data should all be brought into use when any material handling project is planned. For the job shop or high productive operation, material handling methods can be improved when given a thorough work study with reference to overall company operations.

In the past sections of this manual, it has been demonstrated that material handling problems cannot be solved simply by the installation of new material handling equipment. The problem can and does start in the first stages of the development of a new product, but most of us arrive on the scene later than that. Right now we are interested in our present products, our present buildings, and processes which are already in existence.

For example, let's follow through with the case study on handling and machining of castings. (See Installment 7, Nov. 1954 Issue). Say we find the machining area is congested, with skids and castings in and around the production machines. We observe that each piece is picked up and set down many times before it is completed, it back-tracks and criss-crosses its own path many times. The total cycle time from raw casting to complete machining, ready for assembly, is 21 days. Many times, the progress of individual castings is halted in favor of other, so-called "hot items". This causes extra machine set-up time and other delays. These are the basic factors which surround our problem.

Our main objective is to reduce the overall machining cycle time so that a completed assembly can be ready for shipment faster, and we can gain a more

competitive sales position. We want to clear up the congested areas, reduce the number of handlings per piece and provide a better flow of product.

A code that any material handling engineer might use is:

- (1) Reduce all handling to an acceptable minimum,
- (2) Keep materials off the floor, and
- (3) Keep materials moving, while they are in process, if possible.

Plant Layout Aids Are Big Help

In our hypothetical problem it was decided that some further means of mechanical handling was required between the production processes. Many suggestions were made; overhead trolley conveyor, roller type conveyor, unit loads and industrial trucks all were discussed.

But mechanization should not be applied between any two processes without regard for the sequence of operations before and after the ones in question. Many times this will take you into the operations of suppliers and also into the plants of customers. Most noticeable of all elements of the problem, however, is the flow of material through the processes. Many hours will be spent in making various arrangements of processing equipment before a satisfactory flow is developed. Three-dimensional models at 1/4-inch scale make the changing of a layout easy, and various types of two-dimensional film templates with grid sheets save hundreds of hours of sketching and drafting time.

Before any system can be established, machine capacities, work standards, set-up time and economical lot runs of all operations must be reasonably balanced with one another—to insure that all component parts and materials are synchronized to meet at the right time and place. This approach is far from the mere lifting, shifting and lowering of materials by mechani-

(Continued on page 110)

FLOW CHART

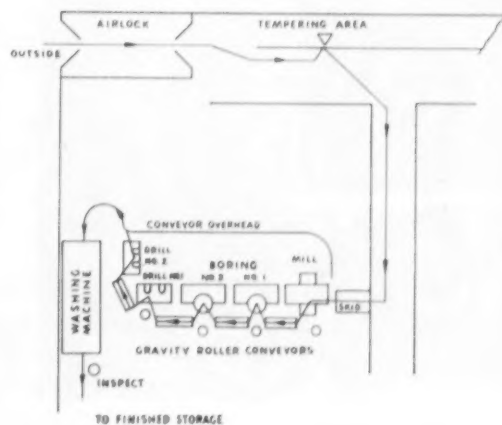
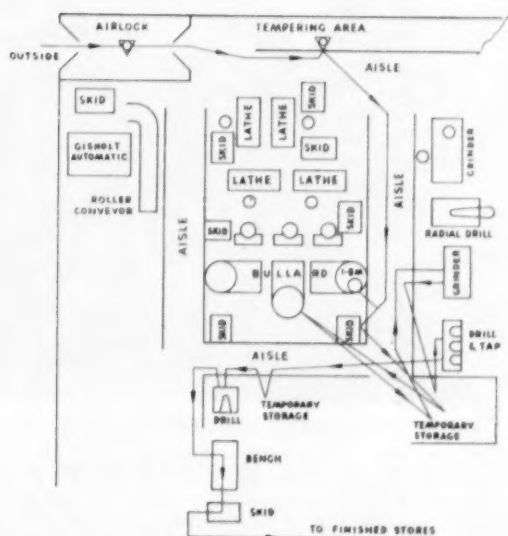
SUBJECT: 182-91630-
CHARTED BY: E.W.F.
CHART NO.: 1 SHEET 1 OF

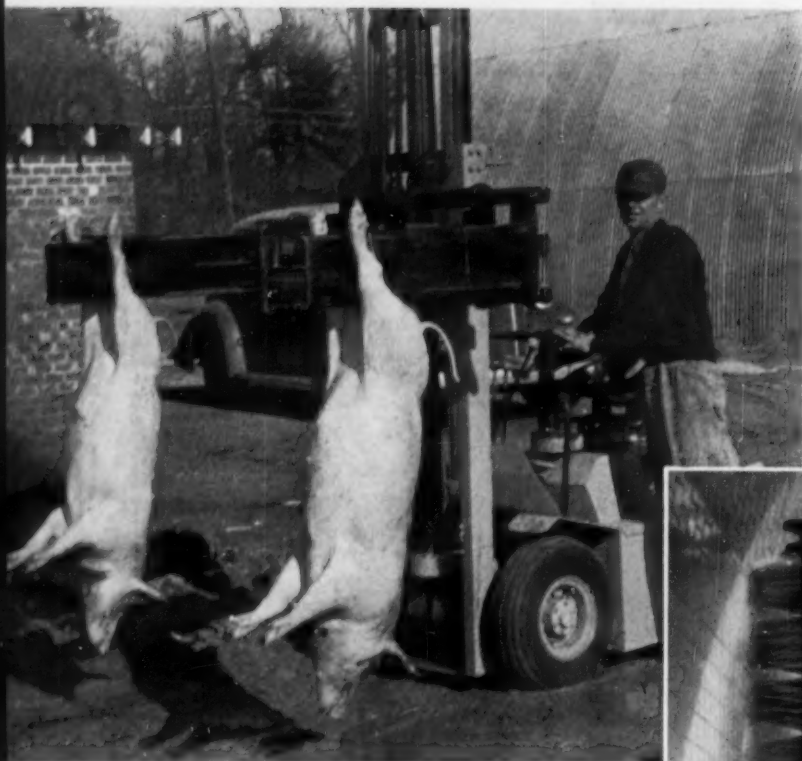
GENERAL DATA		SUMMARY		
SKIDLOAD - 100 PIECES		METHOD	PREP	PROP
7.2 STOCK TURNOVER - 945 PIECES		NO. OF OPERATIONS	8	7
9 SKIDS PLUS REQUIRED		NO. OF TRANSPORTATIONS	13	9
182.32 STD. HOURS REQUIRED ON PRESENT		NO. OF STAGES	8	4
		NO. OF INSPECTIONS	1	1
		HOURS STD. PER SKID	64.702	55.18
		DISTANCE TRAVELED	938' 4.51'	512'
			182.32/496.35	85.97

DATE: 1-11-54
DEPT.: OUTSIDE STORAGE THROUGH
MACHINING TO FINISHED SKID STORES

10032400.31 05.97

PRESENT METHOD							PROPOSED METHOD # 3								
DESCRIPTION OF OPERATION	HANDLING	MOVE	INSPECT	TEMP. STORAGE	MEN REQ'D	DIST MOVED	EQUIPMENT USED TO MOVE MATERIALS	DESCRIPTION OF OPERATION	HANDLING	MOVE	INSPECT	TEMP. STORAGE	MEN REQ'D	DIST MOVED	EQUIPMENT USED TO MOVE MATERIALS
MOVE SKID FROM OUTSIDE STORAGE TO AIRLOCK	○	○	○	○	1	150'	GAS FORK TRUCK 4000 ^{LB} CAP	MOVE UNIT LOAD TO TEMPERING	○	○	○	○	1	100'	GAS FORK TRUCK
TEMPORARY STORAGE	○	○	○	○				TEMPORARY STORAGE	○	○	○	○			
MOVE SKID FROM AIRLOCK TO TEMPORARY STORAGE	○	○	○	○	1	50'	WALKIE TYPE PALLET TRUCK	MOVE TO MILLING MACHINE	○	○	○	○	1	20'	TRANSPORTER
TEMPORARY STORAGE	○	○	○	○			TO BRING CASTINGS UP TO ROOM TEMPERATURE	MILL & PLACE ON CONVEYOR	○	○	○	○	1	250'	STD. 025/PC
MOVE TO IBM 1	○	○	○	○	1	35'	WALKIE PALLET TRUCK	MOVE TO BORING MILL	○	○	○	○		15'	ROLLER GRAVITY CONVEYOR
ROUGH MACHINE	○	○	○	○	1	18.000	STD. 18/PC	TEMPORARY STORAGE	○	○	○	○			
MOVE TO TEMP. STORAGE	○	○	○	○	1	35'	TRANSPORTER	MACHINE & PLACE ON CONVEYOR	○	○	○	○	1	18.00	STD. 18/PC
TEMPORARY STORAGE	○	○	○	○				MOVE TO #2 BORING MILL	○	○	○	○		20'	ROLLER GRAVITY CONVEYOR
MOVE TO IBM 2	○	○	○	○	1	54'	TRANSPORTER	TEMPORARY STORAGE	○	○	○	○			
FINISH MACHINE	○	○	○	○	1	25.000	STD. 25/PC	FINISH MACHINE PUT ON CONV.	○	○	○	○	1	25.00	STD. 25/PC
MOVE TO TEMP. STORAGE	○	○	○	○	1	54'	TRANSPORTER	MOVE TO #1 DRILL	○	○	○	○		15'	GRAVITY CONVEYOR
TEMPORARY STORAGE	○	○	○	○				TEMPORARY STORAGE	○	○	○	○			
MOVE TO #6 GRIND	○	○	○	○	1	20'	TRANSPORTER	DRILL & PLACE ON CONVEYOR	○	○	○	○	1	4.200	STD. 042/PC
GRIND FEET	○	○	○	○	1	5.000	STD. 05/PC	MOVE TO #3 DRILL	○	○	○	○		15'	GRAVITY CONVEYOR
MOVE TO TEMP. STORAGE	○	○	○	○	1	20'	TRANSPORTER	TEMPORARY STORAGE	○	○	○	○			
TEMPORARY STORAGE	○	○	○	○				DRILL & TAP HANG ON CONV.	○	○	○	○	1	5.000	STD. 05/PC WITH OVERHEAD HOIST
MOVE TO G-33 DRILL	○	○	○	○	1	1.8'	TRANSPORTER	MOVE TO WASH MACHINE	○	○	○	○		80'	OVERHEAD TROLLEY CONVEYOR
DRILL & TAP POTHOOLES	○	○	○	○	1	4.300	STD. 042/PC	WASH	○	○	○	○			PROCESS ON CONVEYOR
MOVE TO TEMP. STORAGE	○	○	○	○	1	4.8'	TRANSPORTER	MOVE TO INSPECTION	○	○	○	○		80'	OVERHEAD CONVEYOR
TEMPORARY STORAGE	○	○	○	○				INSPECT	○	○	○	○	1		PARTIAL (50%) WALKIE ON CONVEYOR
MOVE TO G-12 DRILL	○	○	○	○	1	80'	TRANSPORTER	MOVE TO STOCK WAREHOUSE	○	○	○	○		280'	OVERHEAD CONVEYOR
DRILL & TAP	○	○	○	○	1	5.000	STD. 06/PC PLACE ON CONVEYOR	REMOVE FROM CONVEYOR	○	○	○	○	1	400'	STD. 004/PC
BENCH	○	○	○	○	1	6.000	STD. 06/PC	PERMANENT STORAGE	○	○	○	○			
INSPECT	○	○	○	○	1		PARTIAL		○	○	○	○	1	425'	TOTALS/SKID OF 100 PC'S
STAMP PART NO.	○	○	○	○	1	190	STD. 0019/PC								
PLACE IN SKID	○	○	○	○	1	940	STD. 0094/PC								
MOVE TO TEMP. STORAGE	○	○	○	○	1	300'	TRANSPORTER								
TEMPORARY STORAGE	○	○	○	○											
MOVE TO PART LOCATION	○	○	○	○	1	50'	WALKIE TYPE STACER								
PERMANENT STORAGE	○	○	○	○											
					TOTAL	938'	64.702	TOTALS PER 1 SKID							





THIS LITTLE PIGGY WENT TO MARKET on a fork truck, but he didn't enjoy the ride. The pigs were killed, tied to the fork truck clamp and dipped into hot baths for cleaning—a difficult job made simple by ingenuity.

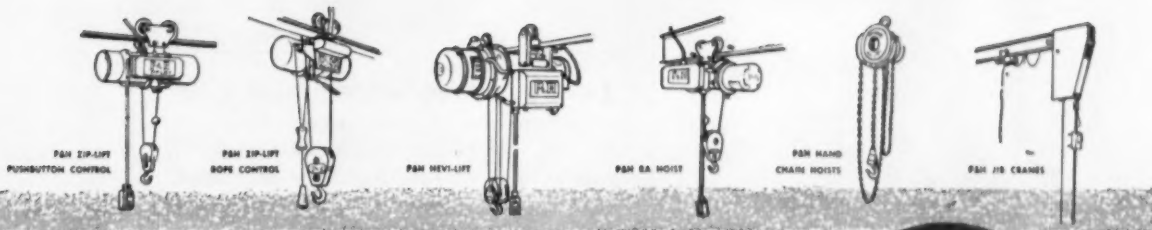


POTTED PLANTS READY TO ROLL on gravity conveyor are not damaged in the least by the ride. This nursery operator is using portable conveyor sections to save many steps a day. Plants are potted and grouped into a box which rolls down the conveyor.

Unusual Handling



TUNNELS, TOO, NEED A BATH, and this fork truck has drastically cut cleaning time at San Francisco's Broadway Tunnel. The 1662-foot tunnel formerly required 128 hours to clean. Now one man and a fork truck complete the job in 4 hours—a saving of 96%.



New...

P&H Hoist Rectifier Brake

...saves money by eliminating linkage and simplifying adjustment problems

P&H Hoist engineers built three basic improvements into this new rectifier brake: (1) They eliminated linkage — so there are less parts to suffer wear. (2) They simplified the adjustment operation so that it can be performed by a single turn of a collar on a threaded hub. (3) They reduced the armature stroke and shifted the brake contact from the magnetic core to the outer rim of the brake pot — eliminates peening the core metal.

Old-style brakes slapped back with an armature stroke of as much as $\frac{1}{2}$ " or even $\frac{3}{8}$ ". On the new P&H rectifier brake, the stroke is only .030" to .035".

Instead of linkage, four springs compress the revolving and stationary discs when the motor is deenergized.

The adjustment collar is notched to engage a spring-loaded catch which holds any given setting. The single adjustment can be made quickly and easily.

These three basic changes add up to time and money saved in maintenance. A test model of a hoist using this new brake ran for two years without one minute of maintenance time charged against it — and it's still going strong!

Sure we'll send one of our sales engineers to see you. He will give you complete information on the new P&H rectifier brake, and news of how you can adapt this feature to your present P&H equipment. Just use the handy coupon below.

Tear out and mail today!

P&H HOISTS
HARNISCHFEGER
CORPORATION

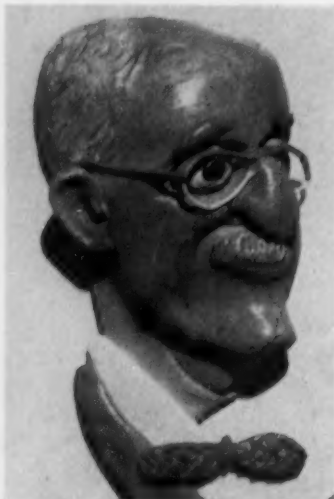
4643 W. National Ave. • Milwaukee 46, Wis.

P&H Hoists
HARNISCHFEGER CORPORATION
4643 West National Avenue, Milwaukee 46, Wisconsin

Gentlemen: Get a man on the job. We'd like to see him.

Name.....
Title.....
Company.....
Address.....
City..... Zone..... State..... 5896

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By William H. Meserole

INAUGURATING with this issue a new FLOW feature, Mr. Meserole will, from time to time, discuss numerous aspects of warehousing and storage. Nationally recognized as an eminent authority on warehouse design and operation, he is President of Ballinger-Meserole Co., of Philadelphia, consultants in this work. Formerly with the U. S. Dept. of Commerce, Mr. Meserole was the author of numerous government research studies on warehousing.

What's the Real Value of Narrow Aisles?

WAREHOUSE aisles used to be 14 feet wide for grocery storage. Then they came down to 12 feet, then 10, and—very reluctantly—nine. (Few counter-weighted machines can operate effectively in this space.) Trucks were manufactured to lop off another foot of aisle. (I'm talking about a 40-inch load of about 2000 pounds.) Finally, we thought we had reached the goal—an aisle six feet wide, plus or minus a few inches.

We have no desire to further reduce the six-foot aisle in any of the tonnage areas of warehouses we work with. Indeed, we may even want seven feet.

Why? Because we need the footage for other purposes—not just as a runway for machinery. Two men with order-pick carts may have to pass each other. A fast order may have to jump over a slow order.

We've reached the goal.

The Cost Aspect

Here's what the narrow aisle means from a dollars-and-cents viewpoint:

Suppose there are 15 aisles in our warehouse. Suppose, with the machines a man has always used, he has needed 12-foot aisles. Well, 12 times 15 would be 180 feet of aisles. On the other hand, suppose the aisles were six feet wide. The difference saves us 90 feet in one dimension.

Now, suppose the warehouse is 300 feet in the other direction. Now, 300 times 90 would be 27,000 feet of warehouse that we **did not have to build** at \$5, \$6, or \$7 a foot. And this is the small saving!

The big saving accrues in the perpetual cost of coursing labor up and down these aisles. And bear this in mind: In an order-pick operation, about two-thirds of a picker's time is spent walking from stack to stack.

That is, 60 percent of his time. He spends the other 40 percent picking up the goods, loading them on his cart, checking his sheet. **We attack the 60 percent by permanently reducing the footsteps.**

I can't quote percentages to express the resulting savings. Evaluation isn't easy, for you don't get a clear before-and-after picture. When a firm moves into a new or remodeled warehouse, new lines and new markets are usually added.

This you can say:

Only since we've been concerned with reducing footsteps have we been able to reach the goal of 200 pieces per-man-hour in chainstore warehouses. We could not have reached it otherwise. That is 200 pieces picked and laid down behind the tailgates, ready for loading, per man-hour applied to order picking. Since labor cost is roughly two dollars for each dollar of occupancy cost, you can see why coursing men over lesser footage is so vitally important.

With aisles of six feet, plus or minus inches, you can now use less floor, less roof and less land and get quite as much building in terms of storage capacity. You can get a higher output per man-hour, and that means you can speed your operation.

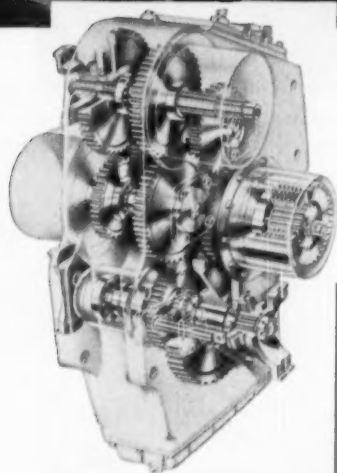
With the money you did not have to spend on the building, chances are you can *completely equip your warehouse* so that, with narrow aisles, you will get a better labor production rate and spend far fewer dollars for overhead.

The 27,000 surplus feet we spoke of before—at, let us say, \$5 a foot—which would be a cheap warehouse these days—represents a saving of \$135,000. The smaller of two savings! That will far more than equip most warehouses.

It should speak for itself.



Driver's left hand rests on power-shift levers—there's no clutch pedal



**Here's the secret of
BIG TIME-SAVINGS:**

the MICHIGAN Power-Shift Transmission! Forward-Reverse and High-Low gears are in constant mesh. Shifting is accomplished by hydraulic pressure. The power-shift levers on the steering column actuate control valves in the transmission. These valves direct oil pressure to the multiple disc-clutches, transmit engine power from the selected drive gears to the output shaft. Hydraulic oil completely lubricates all drive gears and bearings as it flows from top to bottom and returns to the sump through a fine-mesh screen.

You'll cut your loading time!

with the MICHIGAN Power-Shift Transmission

Operating a MICHIGAN Tractor Shovel is both fast and easy. Gone is the old-fashioned heavy duty foot clutch; gone is the tiresome work of clutching every time you shift gears.

The MICHIGAN Power-Shift Transmission does all the work for you. All you do is operate the fingertip hand levers on the steering column . . . one for Forward-Reverse, the other for High-Low speed. Make either shift *while moving in either*

direction without coming to a stop.

The MICHIGAN'S power-shift transmission speeds up operation, cuts loading time, gets you TOP YARDAGE per day.

Get a demonstration right on your own job. It is easily arranged: just phone your MICHIGAN distributor. Did you know MICHIGAN Tractor Shovels are available under the Clark Leasing Plan? We would be glad to send you full details.

**CLARK
EQUIPMENT**

CLARK EQUIPMENT COMPANY
Construction Machinery Division
440 Second St., Benton Harbor 25, Michigan

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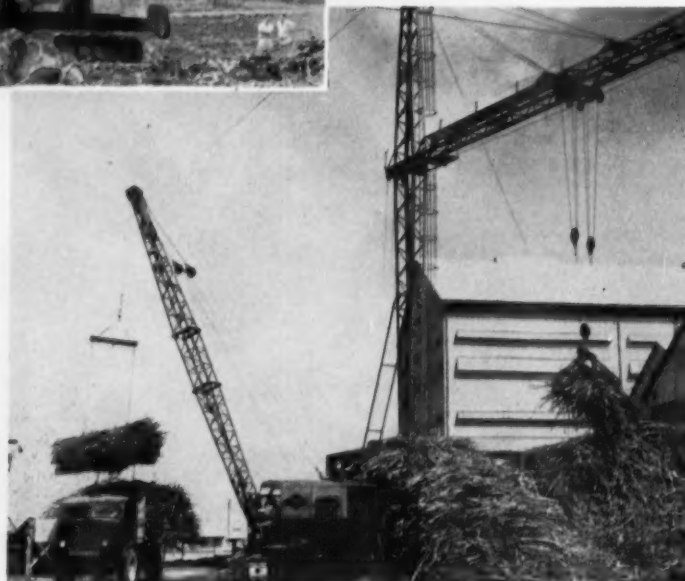
LOADING push-racked cane from windrows to trailer units. (Hawaii)



THROWING grab working with rake and tractor for clean-up.

"Sweet" Jobs for Cranes

Bulk Handling ideas from a highly progressive industry



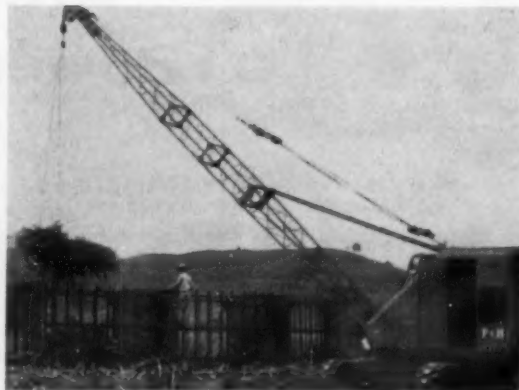
BUNDLED cane unloaded from truck to stockpile, for further handling to conveyor. (Mexico)

HOW today's flexible and adaptable power equipment is being developed for ever broadening fields of application is demonstrated as it handles a material like sugar cane.

Although the traditional machete is still swung by strong arms to some extent—mostly to cut cane on steep slopes, and in fields too rocky for mechanical harvesting—many of the plantations now have some of the latest devices to take manual work out of the job. And although, in a few areas, cane is still loaded in carriers, with some heavy labor involved, most of it is handled by power equipment. Manpower shortages have largely been responsible for constantly expanding mechanization in the handling of this crop.

Cutting sugar cane is a delicate job by most agricultural standards—by many industrial standards. The stalks must be chopped off as close to the ground as possible, but the roots cannot be disturbed any more than

(Continued on page 134)



TRAINS formerly on temporary track. Today, use of large tractor-haulers is increasing. (Puerto Rico)

ACCO
products



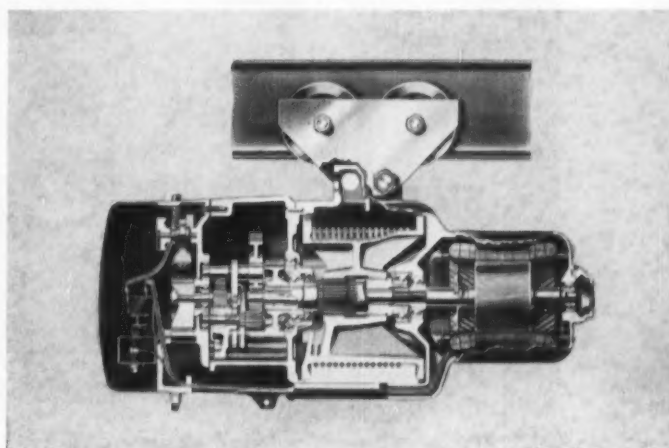
Why WRIGHT Speedway Hoists Merit Full Confidence of Both Production and Maintenance Men

It's a heavy-duty workhorse for Production Men...

**Wright Frame 1
Speedway
¼ to 1-ton**

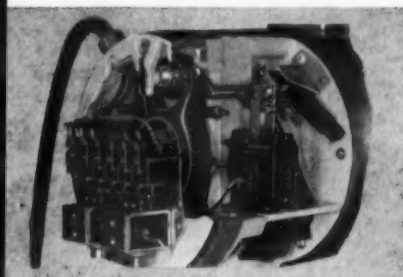
because of sound, generous and practical design of all components, plus standard NEMA specification totally enclosed motors. Heavy-duty design and fine balance give users definite assurance that 1954 Model WRIGHT *Speedway* Frame 1 Hoists will handle tough jobs on any duty cycle for which 1½ H.P., 30-minute NEMA motors are satisfactory. We guarantee this.

A New Booklet, #DH-133B, tells the full story of the many fully-tested structural, electrical and mechanical features that make WRIGHT Frame 1 *Speedways* ideal for production materials handling work. Write our York, Pa., office for your copy of this book that is pictured below.

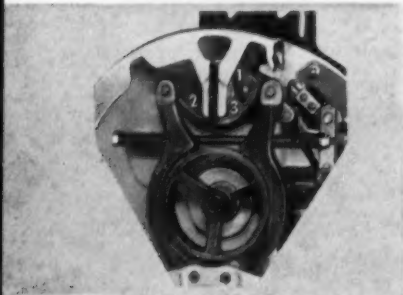


The ideal hoist for production work

It's the easiest hoist for Maintenance Men to service...



Easiest to get at



Nothing to adjust but the cam!

because those components that are most likely to need service or adjustment—on any hoist—are fully accessible when the end housing and side cover are removed as shown in the picture at the left. Removal of housing and cover is a simple matter of loosening or removing a few screws.

To compensate for brake lining wear on the motor brake on these 1954 Model WRIGHT *Speedways*, there is nothing to adjust but the cam. This adjustment is literally "as simple as ABC." Cam settings are pre-determined and numbered. There is no guess work. The long, calibrated compression springs

and the solenoid are factory-set...they NEVER need adjustment for brake lining wear.

Write for this New Booklet

Write our York, Pa., office for this New Booklet, #DH 133B. It gives complete information on the 1954 Model WRIGHT *Speedway* Electric Hoists, Frame 1 and 1½ (500 to 4000 lb. capacities). The booklet fully describes the many electrical, mechanical and structural features that make these WRIGHT Hoists ideal for production and maintenance men.



ACCO



**Wright Hoist Division
AMERICAN CHAIN & CABLE**

York, Pa., Chicago, Denver, Detroit, Los Angeles, New York, Philadelphia, Pittsburgh, San Francisco, Bridgeport, Conn.

**Hoists
Trolleys
Cranes**

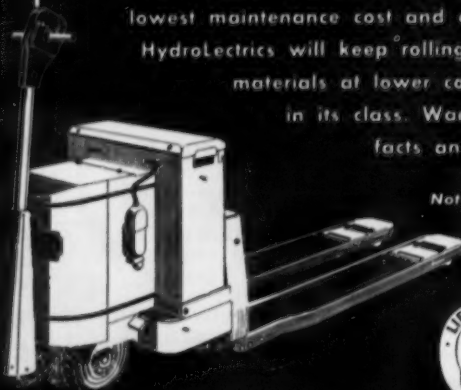
STUEBING DESIGNED • STUEBING ENGINEERED • STUEBING BUILT

Hydro~~Electric~~ LIFT TRUCKS



HEART OF THE Hydro~~Electric~~ THE DYNA-DUAL POWER UNIT

This sturdy Dyna-Dual Power Unit out performs all others for ease of operation—dependability—lowest maintenance cost and economy of power. HydroElectrics will keep rolling and moving your materials at lower costs than any truck in its class. Want proof? Complete facts and data on request.



Note: The Dyna-Dual Power Unit is interchangeable on all models.



LIFT TRUCKS
INCORPORATED

2423-31 SPRING GROVE AVE.
CINCINNATI 14, OHIO



There is a model for every purpose to handle any kind of material.

Circle No. 41 on Reader Service Card for more information

SWEEPERS . . .

(Continued from page 83)

(2) degree of congestion, such as aisle clearances, pillars, columns; (3) condition of floors; (4) traffic volume (interference with other vehicles, etc.); (5) safety regulations; (6) sweeper performance (capacity, size, maneuverability, ruggedness, sweeping efficiency, ease of operation, freedom from downtime).

Floor Soilage. Floor soilage is not too critical a factor. Today's better sweepers easily handle a wide range of dust, debris and litter. But, for best results, soilage and heavy litter should be reasonably dry and dirt particles should range from ordinary plant dust to heavy oil-laden foundry sand, litter and debris. Ultrafine dust, as in ceramic plants, is sometimes more difficult to sweep; this is because even the passage of a sweeper or the movement of workers causes air turbulence. For such conditions, sweeping compounds may be helpful.

Congestion. Congestion is important. While some power sweepers are only 29 inches wide, and can move down narrow aisles easily, columns, machines and other barriers to reasonably fast travel help reduce potential savings in sweeping time.

Floor Conditions. Floors may vary widely as to type and condition without too serious effect on sweeping performance. The best floors are smooth ones which allow brush and vacuum to work most effectively. Worst floors are badly humped or ridged, and such floors may hamper the effectiveness of vacuum pickup, for example. However, most sweepers have floating hoppers which compensate for floor irregularities.

Traffic Volume. Traffic volume is a factor in sweeping efficiency. For best results, power sweepers should work with traffic and have sufficient speed to traverse aisles as rapidly as other vehicles. Some plants, due to heavy traffic, confine their sweeping to second and third shifts; but this is not the general rule.

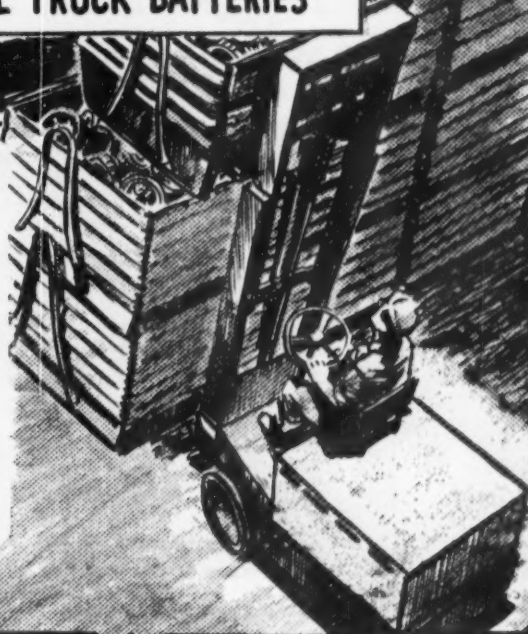
Safety Regulations. Safety regulations are essential and heavy

FACTS ABOUT **Exide**[®]

IRONCLAD[®] INDUSTRIAL TRUCK BATTERIES

**GET MORE LIFTS
EACH SHIFT
...WITH LOW COST
EXIDE IRONCLAD POWER!**

RAPID, ACCURATE HANDLING, PRECISE SPOTTING ARE MAJOR COST SAVING ADVANTAGES OF USING EXIDE-POWERED LIFT TRUCKS. THEY RESPOND INSTANTLY TO ANY POWER NEED. THE LARGE RESERVE POWER OF EXIDE-IRONCLADS KEEPS TRUCKS WORKING FULL SHIFTS... WITH NO COSTLY UNSCHEDULED DOWN TIME!



**BATTERIES ARE *WORKED* TO DEATH
BY EXIDE ENGINEERS TO LEARN
SECRETS OF LONGER LIFE**

SINCE 1910, RESEARCHERS HAVE GREATLY IMPROVED EXIDE-IRONCLAD PERFORMANCE AND USEFUL WORKING LIFE, BUT THE BASIC IRONCLAD PRINCIPLE OF TUBULAR CONSTRUCTION REMAINS THE SAME.



LAB TESTS OF IRONCLADS AGAINST CONVENTIONAL TYPES OF BATTERIES SHOW THAT THEY GIVE BETTER PERFORMANCE... AND FROM 20% TO 30% LONGER LIFE! THESE TWO FACTS, DEMONSTRATED BY THOUSANDS OF BATTERY USERS, ARE THE REASON WHY...



PROTECTED CONDUCTING GRID
COMPRESSED ACTIVE MATERIAL
SLOTTED RETAINER TUBE
IRONCLAD POSITIVE PLATE

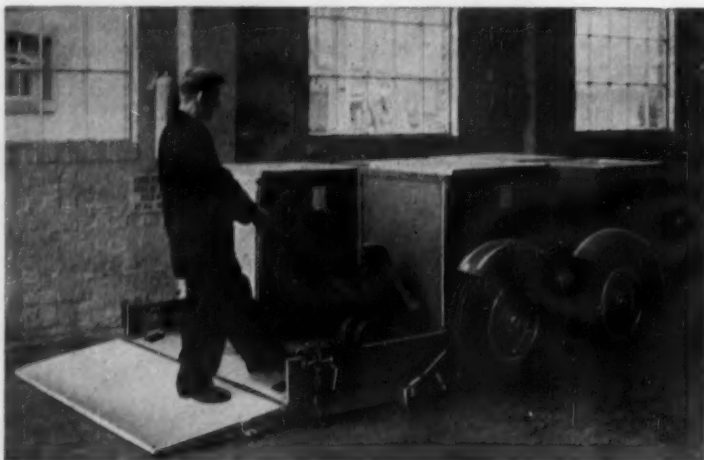
**EXIDE-IRONCLADS
ARE YOUR BEST POWER BUY
AT ANY PRICE!**

LET EXIDE HELP SOLVE YOUR INDUSTRIAL TRUCK BATTERY PROBLEMS ① CALL AN EXIDE SALES ENGINEER FOR FULL DETAILS ② WRITE FOR FORM 1982, A MANUAL ON INSTALLING AND MAINTAINING MOTIVE POWER BATTERIES

Exide INDUSTRIAL DIVISION, The Electric Storage Battery Company, Philadelphia 2, Pa.
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EEZION ROAD TRAILER ELIMINATES LOAD-LIFT

WHEEL YOUR LOAD STRAIGHT ONTO THE
EEZION AT FLOOR LEVEL



Then operate the hydraulic pump—hand or power—to raise the load platform—



The trailer is now ready for the highway. 13½" ground clearance—over run braking servo or pressure brakes on larger models.

No load on hydraulic system with platform raised.

Capacities: 15 cwt, 30 cwt, 3 tons, 5 tons. Special models for carrying cable drums—larger capacities to order.

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Circle No. 30 on Reader Service Card for more information

SWEEPERS

Continued

duty plant sweepers are designed to meet all usual requirements. Some plants specify maximum vehicle speeds and nearly all have specific rules regarding lights, mechanical safety features, etc.

Sweeper Performance. Sweeper performance greatly affects potential maintenance cost-savings. Most sweepers have ample capacity, ranging up to more than 100,000 square feet an hour, and with a sweeping speed range of two to eight miles an hour. This is well in excess of most requirements and operating conditions.

Sweeper size (overall width and sweeping path) is important. Most plants find it more economical to use fewer machines which are somewhat larger than planned, rather than attempt to get by with a larger number of small sweepers. This is because larger models, sweeping 30, 40 or 50 inch paths, are frequently built more heavily, have more capacity, and can usually be relied on to stand more abuse and require less maintenance than small, low-priced units.

Maneuverability is an outstanding consideration in all plants where congestion is a problem. A good sweeper should literally be able to "turn in its tracks" to save time in crowded quarters. Ruggedness should be required in any sweeper, regardless of end use. In most plants, sweepers are operated on a wide variety of floors, ranging from wood block and diamond-plate to concrete or hardwood; but they also are often used for plant walks, ramps, drive-ways and parking lots.

Despite the many advantages to be derived from the use of mechanized sweepers, many maintenance supervisors and company officials may point out that they have plenty of brooms, an adequate staff of men to push them, and their floors usually are reasonably clean. Why, they ask, should they invest in anything as expensive as a mechanical sweeper?

The greatest fallacy in their reasoning is, of course, that in all probability, they are cleaning their

Less Idle Time

WITH

MOTO-TRUC*



* To make an investment in a lift truck is one thing . . . to make it pay is another. The amount of idle time logged against a truck is a major factor in whether a truck is "paying its way."

MOTO-TRUCS offer LESS idle time because of simplified operator controls. Their patented Roller Grip Controls make it easy for practically anyone in your plant to operate the truck . . . and remember . . . There's a MOTO-TRUC for every purpose.



Simplified Roller Grip Controls



Send for
Bulletin No. 54



The MOTO-TRUC Co.

Representatives in Principal Cities

1955 E. 59th St. • Cleveland 3, Ohio
Pallet . . . Platform . . . Hi-Lift Trucks
LARGEST EXCLUSIVE MANUFACTURER
OF "WALKIES"

Work-O-Matic® End-Loading Scoop for lift trucks.

Greater storage with compactly tiered Steel Boxes.

Work-O-Matic® Box in controlled dumping operation.

Select the money-saving units you need from INDUSTRY'S BROADEST LINE OF Material Handling Containers

Work-O-Matic® Multi-Duty Tray for long pieces. Collects, transfers, tiers and dumps.

Skid Platform . . . one of many types.

Typical Steel Skid Box.

Double-Deck Pallet.

Nesting and Hopper Front Steel Shop Boxes—two of many standard types.

Yu-O-Matic Rotary Parts Storage Stands.

Work-O-Matic® Box with Production Positioning Stand.

A broad line is one thing. Far more important is the fact that Union Metal units introduce exclusive *new method* features responsible for huge cost savings in plant after plant. Get up-to-the-minute facts. Indicate the type units you are interested in and write to The Union Metal Manufacturing Company, Canton 5, Ohio.

*Patent No. 2,445,038. Other patents pending.

UNION METAL

Material Handling Equipment

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SWEEPERS

Continued

floors the expensive way when they employ the pushbroom method—simply because “cheap” maintenance help and inexpensive labor are becoming increasingly difficult to find.

FLOW thanks the following for photographs and data used in the preceding article: Little Giant Products, Parker Sweeper Company, G. H. Tennant Company, Wilshire Power Sweeper Company.

HOISTS . . .

(Continued from page 73)

the type of mounting (see section 4, page 73) and will help you to decide on the type of trolley most suitable for your application (i.e. hand pushed, hand geared, motorized.)

If no horizontal travel is involved consideration should be given to the possibility of using a hand or electric winch type hoist in place of the conventional hook type suspension.

6. Dangerous Conditions

Full consideration must be given to the question of whether or not the atmosphere at the site of the installation is hazardous because of grain dust, fumes, inflammable liquids of a volatile nature and of similar conditions. If hazards exist, then special equipment must be used. Such equipment might include: hand hoists with non-sparking hooks and chains; air hoists; spark enclosed electric hoists. There are no general specifications covering hoist construction for hazardous locations. When special equipment is felt necessary contact your insurance underwriter or study local codes for minimum specifications covering the hoist and control design.

Overloading is a dangerous condition which must not be tolerated under any circumstances.

BETTER YARD MATERIAL HANDLING



Mobile, rubber-tire yard cranes handle and transport a wider variety of sizes, shapes and weights of material than single-purpose equipment can.

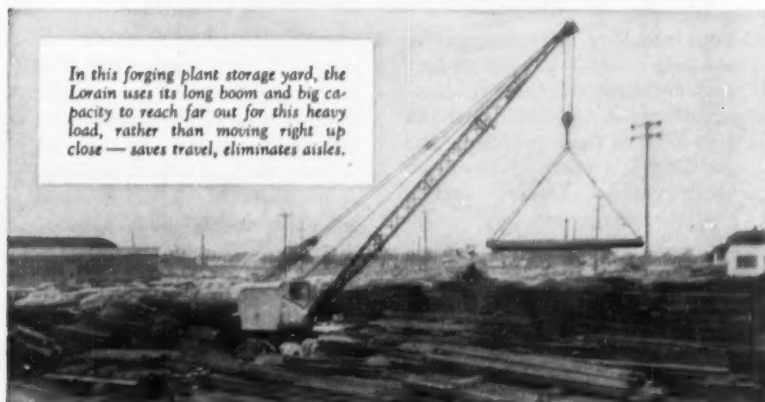
The tremendous wartime and post-war development of our industrial plants has seen a similar expansion in outside storage and warehousing facilities. This has meant even greater reliance in recent years on the mobile, rubber-tire crane as a material handling tool. The operation and economic advantages of this type of equipment are as numerous as the materials it can handle, not to mention the extra "bonus" jobs it can perform.

A ONE-MAN YARD CREW

The Self-Propelled Crane, most popular of material handling yard cranes, consists of a completely revolving turntable mounted on a rubber-tire carrier with the operator controlling all crane and travel operations from the turntable cab.

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1. **Unrestricted mobility** — Unlimited by tracks or fixed structures, it can serve all parts of yard, travel any reasonably smooth surface.
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3. **Saves labor** — One man replaces a "gang" with more efficiency, greater safety.
4. **Unvarying efficiency** — Can work 24 hours a day... in any kind of weather.
5. **Simultaneous hoist, swing, travel** — Any combination of operations for maneuverability and efficiency.
6. **More storage area** — Long booms reach high and far, stack materials higher... fewer space wasting aisles needed... more storage volume per sq. ft.
7. **Lifts, transports, pushes** — Loads may be suspended from boom or carried on utility platform; also power to push or pull railroad cars or trailers.
8. **Bonus jobs** — Crane capacity for construction, maintenance and erection jobs. Not just a one-job machine.

The Self-Propelled Crane can well be your key to better yard material handling. Its capacity, reach, mobility and one-man operation are reasons scores of industries are switching to this modern, mechanized method.

BY THE THEW SHOVEL CO.
Manufacturers of
LORAIN CRANES FOR INDUSTRY

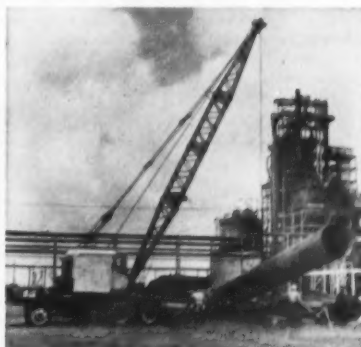
The statement has been made of Lorain Cranes that they will "handle any type, size or shape material." There are more than 16 basic types of front end attachments available (as illustrated) to permit handling anything from ashes to steel.

16 ATTACHMENTS — TO HANDLE SCORES OF MATERIALS



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WAREHOUSE VOLUMES . . .

(Continued from page 79)

a higher load. This is shown in items 7, 12 and 13 of columns 5 and 6 in *Tabulation A*.

3. Vertical Deviation from a Uniform Block IF (UBIF), Figures 2 and 3: In active warehousing of large quantities of the same item, or of different items in the same sized containers, blocks may be uniform, in which case this IF is 1.000 as in Fig. 2. In a very active block of miscellaneous units being turned over a number of times per month and warehoused without racks or bins, this IF may be in excess of 2.000. This is shown in Fig. 3, where the UBIF is 2.250. Use of racks, shelves or bins may fix this IF, depending on whether flat tops or racks or bins are used for storage.

4. Vertical Unused Available Working Head Room IF (HRIF), Figure 3: This is based on the difference between working head room and the top of the uniform warehousing block, determined through the application of the previous IF. It is usually a more sizeable factor than is generally supposed. In Fig. 3 it is 1.500.

Most warehousing illustrations show large, uniform blocks of units with little or no unused available working head room. Unfortunately, our thinking of the efficiency of the use of available volume is often unduly affected by the presence of a few such blocks of pleasing appearance. Allowance must be made for the fact that the major portion of warehousing is usually not of a uniform nature.

There are a number of reasons why this condition exists—the height of the warehousing unit may not fit well into the available working head room; the items being warehoused may be too weak to stand the load of high stacking; or the loads may be too heavy or bulky for the available handling equipment to stack.

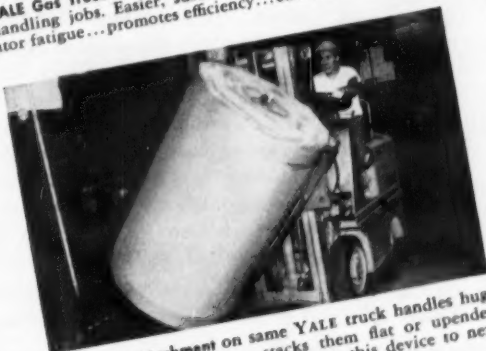
5. Horizontal Aisle and Access IF (AAIF): This represents an increase in area and volume determined by estimate or by layout. It is seldom less than 1.3 and

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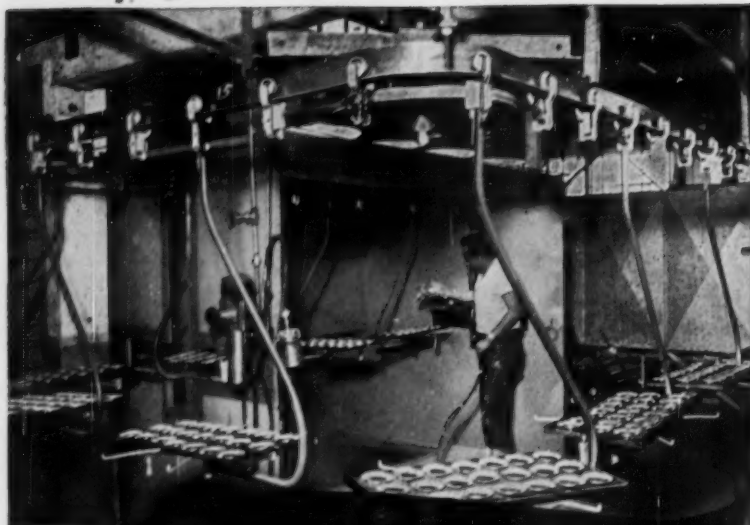
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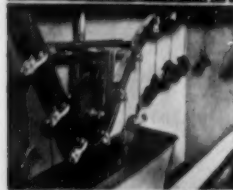
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WAREHOUSE VOLUMES

Continued

may be considerably more depending upon the material handling equipment used, item accessibility required, and the size, shape and column interference encountered in the warehouse building.

6. Composite IF: Referring to *Tabulation B*, it will be noted that the *Composite IF* applies to area, head room and volume. It is the product of multiplying together all the *IF's* under each of the above five headings. Multiplying the basic area, head room or volume with the appropriate *Composite IF* will result in the total warehousing requirements.

It would be most useful if we could "rate" an empty warehouse building with a *Composite IF*, but this is not possible unless we have a definite knowledge of the units to be warehoused and their warehousing characteristics. Once a building is "rated" for a given service, this rating will stand until the warehousing practices are changed, or until new products having different warehousing characteristics are warehoused.

e. Additional areas:

In addition to the storage function, there are other in-common, functions which require area and volume—for example, receiving, order preparation, packing, shipping, maintenance and repair. There are also elevators, stair wells, lavatories, washrooms and heating facilities that require volume. These additional areas need not have the head room required for the warehousing function, consequently they are considered separately as shown in item 10 of *Tabulation B*.

IV. Development of a Typical Determination

The accompanying data indicates the application of these elements and factors. The actual sequence of their consideration is not important to the ultimate result, but, to simplify the applica-

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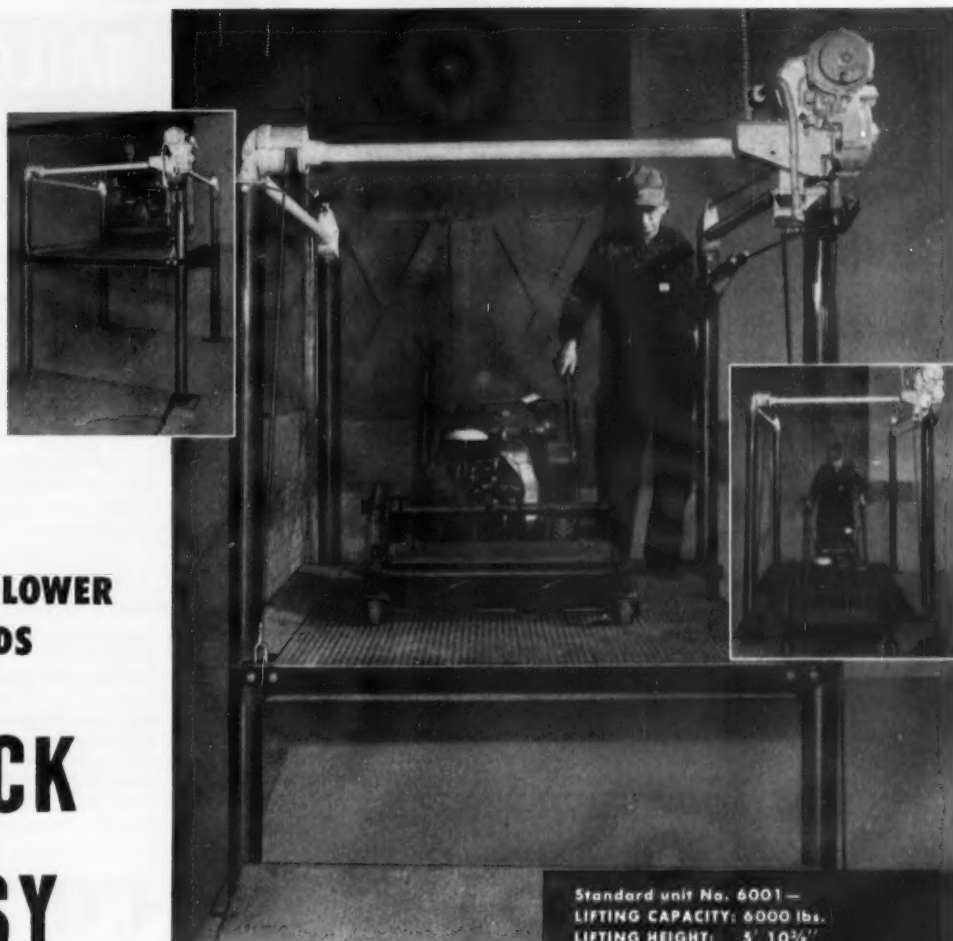
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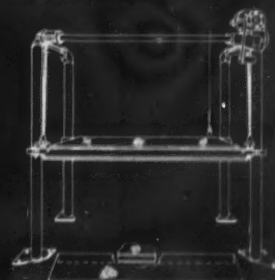
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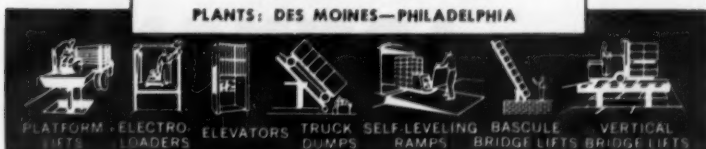
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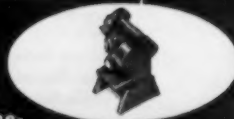
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WAREHOUSE VOLUMES

Continued

tion it is best to consider them in the order listed. Working head room has been assumed to be 18'-0". An allowance of an additional 1'-0", or less, should be sufficient to provide for the use of mechanized stacking equipment.

The determination of the warehouse area and volume is broken down into two steps: First, Determination of the Basic Area and Volume, Tabulation A; and second, Determination of the Total Warehouse Area and Volume, Tabulation B. It is assumed the units to be warehoused are tote boxes, skids, regular pallets and special pallets.

V. Conclusion

Referring to Tabulation B—it may appear that these efficiencies are exceptionally low. This is because warehousing "use" efficiencies are usually much lower than generally supposed. Because of this general misconception, a surprise is usually in store for those that develop them by the methods just outlined. This indicates there is much to be done in the direction of more efficient warehousing.

Carrying the method of volume analysis one step further, by breaking down the warehousing unit into its various *IF's*, we will see a still greater degree of difference between the volume of the items being warehoused and the volume of the warehouse.

The warehousing requirements developed by this method represent a reasonably accurate answer to the area, head room and volume requirements for the items considered. However, it must be remembered that *IF's* are sensitive, and that the final answer can be no more accurate than the *IF's* used in its derivation.

This method can also be applied to maintain a check on the "use" efficiency of present warehousing. Calculation of the magnitude of warehousing that should be used will provide a check against the warehousing that is being used. Experience in the use of these data will indicate possible improvements in existing operations.



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HANDLING MANUAL . . .

(Continued from page 90)

cal means. It must be recognized that all resources of an industrial organization have their own particular time cycles.

To study present conditions only is not sufficient. Back records of high and low periods of production, as well as a forecast of future high production expected, should be taken into consideration. Inventory control and stock turnover have specific bearings on the quantities of parts or material to be processed in any given period. These facts and procedures will help an engineer not to fall victim to generalizations regarding a problem. His decisions will be based upon accurate studies of conditions within his plant as they are influenced by the marketing and sales policy of the company. It is only on this basis that appropriate mechanical equipment can be purchased for the job, rather than the job fitted to the equipment. Comprehensive analysis will help insure whether or not an expenditure is justified for equipment and the methods proposed will work effectively.

In review, we remember the elements of a problem as well as the general rules used to achieve the objectives of good material handling. (See November and December installments.)

Make Flow Chart

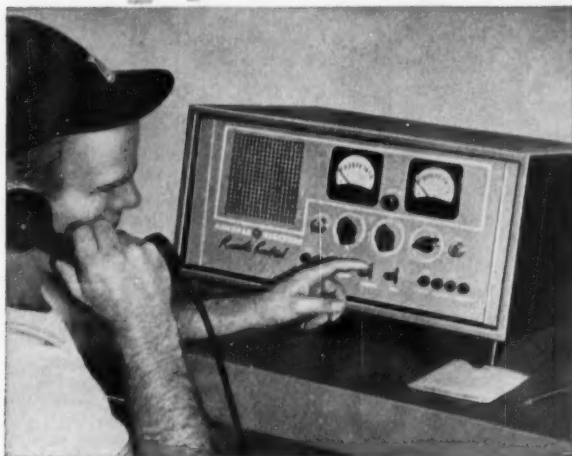
The first step is to make a flow chart with an accompanying flow diagram. For the start of a material handling analysis, you obviously need not make a flow chart on each part. Take a part which is representative of one grouping, such as base units. They may vary in size, but they are put through the same sequence of operations. (You will find many instances where parts dissimilar in size and shape can be grouped because of operation sequence.) Should your first efforts on flow charts show that improvements are possible and economical, then it will be necessary to make a chart on all parts used in the manufacture of your products. Again, use the grouping method of parts or materials of



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HANDLING MANUAL

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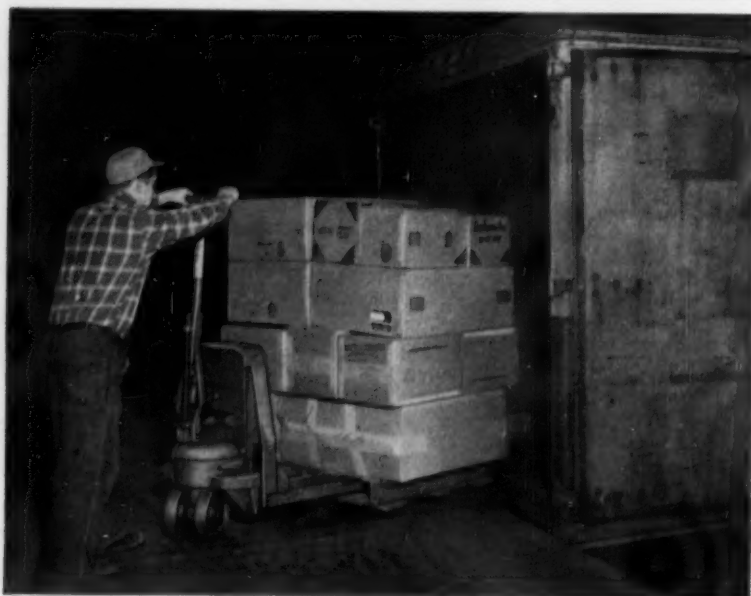
same processing sequence and operation time standards.

In Section 8 (Nov.), we analyzed the receiving of castings from a supply foundry through to outside yard storage. Our next step is to take the casting from the yard through the machining processes and deliver it to finished parts stores.

Study the accompanying flow chart and diagram. Follow each element; question each as to why, who, what, when, where and how. For example, take the first four elements. A fork truck carries a unit load of castings 150 feet and places them in an airlock for temporary storage. Next a walkie type truck takes the unit load out of the airlock and places it in a tempering area, which is another temporary storage.

Then the questions: Why doesn't the fork truck take the unit load

directly to the tempering area? In trying to get an answer to this one, we find that gas trucks have not been allowed inside the plant—although there is a high ceiling, and also obnoxious odors from some processing equipment. This practice was started some time ago and it had not been realized how much extra cost was involved to continue it. (No doubt your plant is no different. Every day you walk by operations and practices to which you pay no attention. Too many such practices are taken for granted.



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Why Temporary Area?

Next, why do we have a tempering area? Certain months of the year, castings are too cold to be machined as soon as they are brought in. Therefore, they must be warmed to room temperature. Could a unit load be taken directly to a machine when castings are not in need of tempering? Are unit loads stacked more than one high?

As you follow through the elements and the diagram, you note that material travels back and forth, with some criss-crossing. Can this be reduced? Possibly, but it will take a new layout.

There are 8 operations on this casting. Can any of these be eliminated, combined, simplified; can the sequence be changed to help achieve our objective? To combine will take retooling, or even maybe a new machine which will do two or three operations.

Proposed Method

At this point, our answers have given us some definite information with which to plan a new equipment layout. Looking at the proposed method No. 3, we find a new layout and sequence of operation elements. A study of this chart shows that we have simplified or combined some of the elements, all of which will produce savings in time and travel of materials.

Basically, all material handling can be classified as lifting or shifting of materials. Wherever mechanical equipment can be employed on an operation, it will reduce the time of lifting and shifting per unit. Weight, size, shape, frequency, speed and building conditions all have a definite bearing on the type of equipment selected,

and there are four further rules of thumb which can be used:

(1) Whenever materials travel from one location to many other locations, regardless of area boundaries, floor operated industrial trucks, tractor trailer trains, and other such equipment should be considered.

(2) Whenever materials flow with regularity from one location to another, some type of conveyor should be considered.

(3) Whenever materials move intermittently within fixed area boundaries, monorails, hoists and cranes should be considered.

(4) Whenever space saving is a necessity, such equipment as bins and skid boxes, unit loads, portable stacking racks, and permanent racks may be used to turn square foot area into useful cubic space.

After these considerations, you bring your work measurement data, set-up time, economical lot runs, etc., into the picture. As we noted in the present method, the castings were moved, processed and stored several times. No record was on hand as to how long they stayed in temporary storage, but we did note a processing cycle time of 21 days.

Now, with a new philosophy, we want to form a straight line machine set-up, with operations balanced so that a casting will be completed and into finished goods storage before it hits the floor or a bin for any length of time. Also a change from producing for a customer's order to producing for a 7.2 stock turnover inventory will have to be made in order to lay out for a straight line flow.

A review of the elements and

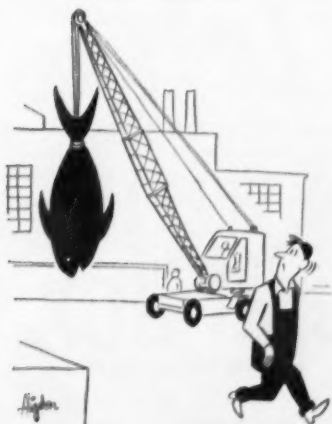


diagram indicate the new methods and layout. The summary indicates in what elements savings can be made. However, it doesn't show that the overall cycle time may be reduced to 12.40 days on a single shift basis. This may be accomplished because the conveyor provides both transportation and storage, the operations follow a direct sequence, and the parts are completed and sent directly to the storeroom.

There are, of course, other possible solutions; it is not enough

to plan and propose that one method is better than another. But we must know exactly how much better. Through the use of work measurement, time standards for a given task can be developed and applied to proposed elements.

Procedures and systems for the handling and control of finished goods inventories will be covered in the next installment of FLOW's *Practical Manual of Material Handling Procedure*.



Model MC-4-24. 4000 lb. cap.

Save Space... Save Money with CRESCENT PALLETIER

Barrett Telescopic Palletier—the all-purpose hydraulic fork lift—handles a wide range of jobs. Loads and unloads trucks; box cars. Lifts capacity loads to higher levels for space-saving high stacking. Reduces man power to minimum. Speeds flow of materials through plant. Cuts handling costs to the bone.

SAFETY FEATURES: Complete operator visibility in all directions—less fatigue. Smooth-acting hydraulic brakes automatically applied when driver leaves seat. 10 models; electric power. Capacities 1000 to 12,000 lb. Collapsed heights—68" to 83". Total fork lift, 90" to 130". Free lift to 66". Also available in non-telescopic models and diesel power. Special attachments.

Barrett Palletier Catalog gives detailed description. Also Catalog 535 on the complete Barrett Line. Your request will bring copies.

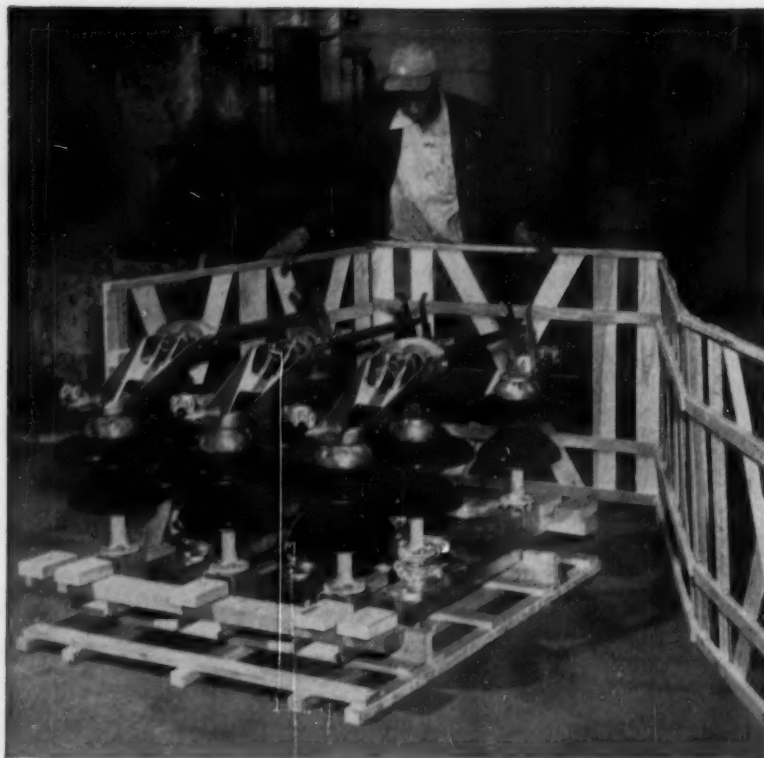


CATALO G 535 PALLETIER CATALOG

Representatives in All Principal Cities. Canadian Licensee: S. A. Armstrong, Ltd., Toronto, Canada.

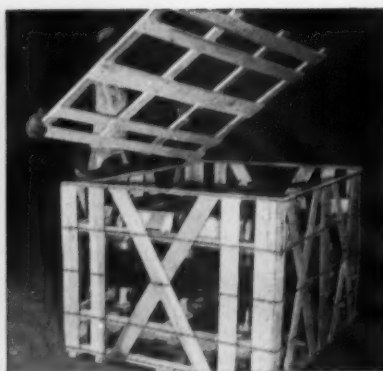
BARRETT-CRAVENS COMPANY
614 Dundee Road, Northbrook, Ill.
CRESCENT
BARRETT

ONE MAN DOES MORE THAN 3 OR 4... WITH A BARRETT
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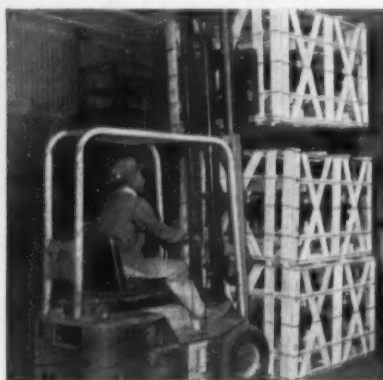


Switch is set in place by lift truck on pallet base specially designed to permit use of same crate for switches of two sizes. Wirebound mats wrap around easily, are secured in minutes.

Although 106 pounds lighter than previous container, which was custom built for each switch, rugged engineered wirebound permits fork lift handling and stacking of 759-lb. gross weight units.



Hold-down assembly, already in place here, goes on next. Then top is placed in position and nailed. All parts fit nicely, reinforcing each other for strength and easy assembly.



Prize-winning General-Engineered Wirebound Cuts Packing Time 85% for Delta Star



This wirebound crate won first award for excellence of design for Delta Star in the 1954 competition sponsored by the Society of Industrial Packaging and Material Handling Engineers, the 6th consecutive first for containers by General Box.

The change from a custom-built crate to a General wirebound design cut packaging time for high-voltage disconnect switches from $3\frac{1}{2}$ hours to $\frac{1}{2}$ hour and reduced gross shipping weight 106 pounds per unit—from 865 to 759 pounds. These important savings were accomplished by Delta Star Electric Division, H. K. Porter Company, Inc., of Pittsburgh.

Skilled labor was required to build the crates formerly used, while the precision-made parts of the new wirebound are put together by unskilled labor. A bit of ingenious design that makes the crate quickly adaptable to another size switch permits standardization. There is a further saving in the

lower cost of the materials in the General wirebound, an improvement in the degree of protection afforded—thanks to engineered and tested design—and an improvement in the appearance of the container.

Specialized experience and design and testing facilities unmatched in the industry are applied to the creation of custom-designed, volume-produced containers by General Box. To find out how much better your packaging can be, have a General man call. No obligation. Consult your local directory, or write direct. Ask for your free copy of illustrated booklet "The General Box."

Factories: Cincinnati; Denville, N. J.; East St. Louis; Detroit; Kansas City; Louisville; Milwaukee; Prescott, Ark.; Sheboygan; Winchendon, Mass.; General Box Company of Mississippi, Meridian, Miss.; Continental Box Company, Inc., Houston.

Engineered Containers for Every Shipping Need

- Wirebound Crates and Boxes • Generalift Pallet Boxes • Corrugated Fiber Boxes • Cleated Corrugated and Watkins-Type Boxes • Stitched Panel Crates • All-bound Boxes

General Box

1847 Miner Street, Des Plaines, Illinois

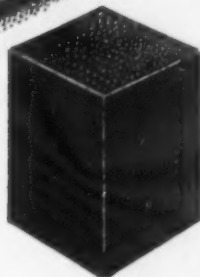


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PACKAGING AND SHIPPING SECTION

TABLE OF CONTENTS

Radar Protects Shipments	118
Unitizing System for Soft Goods	122
Packaging 40,000 Units per Minute!	124
Remote Weighing for Better Handling	126
Packaging & Shipping Idea of the Month ..	128
What's New in Packaging & Shipping Equipment	130



An Easy Index to This Month's Advertisers

Are you looking for a particular type of packaging and shipping equipment? Listed below are advertisers according to type of product they are advertising in this issue. We have attempted to make your job a little easier by listing them as often as possible. To use this index, find the type

of product in which you are interested . . . turn to the advertisers listed under that product . . . circle the correct numbers on the reader service card, mail it, and you'll get complete information in a jiffy.

CONTAINERS

Bigelow-Garvey Lumber Co.	119
Gaylord Container Corp.	135
General Box Co.	114
Mead Board Sales, Inc.	133
Wirebound Box Mfrs. Assoc.	138

CUSHIONING AND BARRIER MATERIALS

Nichols Paper Products Co.	134
---------------------------------	-----

DOCK BUMPERS

Durable Mat Co.	138
----------------------	-----

DOCK SHELTERS

Capco	134
------------	-----

GLUES, TAPE AND TAPE DISPENSING EQUIPMENT

Derby Sealers, Inc.	132
Mid-States Gummed Paper Co.	140
Minnesota Mining & Mfg. Co.	117

MARKING AND STENCILING EQUIPMENT

Adolph Gottscho, Inc.	139
Weber Addressing Machine Co.	132

PACKAGING MACHINERY

Pak-Rapid, Inc.	140
----------------------	-----

STRAPPING, STAPLING AND STITCHING EQUIPMENT

Arrow Fastener Co.	132
Bostitch	131
Brainard Steel Div., Sharon Steel Corp.	121
Fastener Corp.	139
Dave Fischbein Co.	141
Gerrard Steel Strapping Div.	129
Signode Steel Strapping Co.	137
Union Special Machine Co.	134

WORLD'S STRONGEST TAPE?

Even "The Bronk" can't break it!

"SCOTCH" Brand Filament Tape is super-strong, amazingly shock-resistant. Thousands of filaments imbedded in the pressure-sensitive adhesive give it up to 500 lbs. tensile strength per inch of tape width. New exclusive "mirror sur-

face" adhesive gives 100% tape contact; *puts all the tape strength to work.* For complete information on how you can use it in materials-handling and heavy-duty packaging, just write on your letterhead to Dept. BW-25.

FILAMENT TAPE... one of
300 PRESSURE-SENSITIVE
TAPES
for industry, trademarked...

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SCOTCH
BRAND

The term "Scotch" and the plaid design are registered trademarks of Minnesota Mining and Mfg. Co., St. Paul 6, Minn. General Export: 99 Park Avenue, New York 16, N. Y. In Canada: P.O. Box 757, London, Ontario.

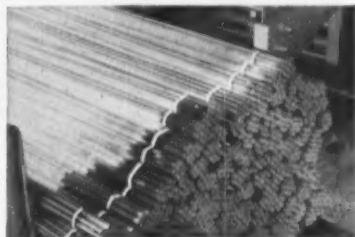


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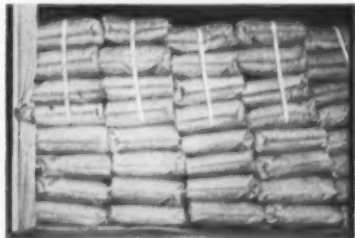
**LOOK what
you can do
with it!**



CONTAINERS FOR PRODUCTS open in seconds with Tear Strips of "SCOTCH" Brand Filament Tape. Just a pull of the tape and Z-I-P... the carton opens, just like cigarettes —no knives, cleavers, or wedges; ends loss from damaged goods.



BUNDLE metal conduit, pipe, tubing, lumber, and other hard-to-handle materials with "SCOTCH" Filament Tape and automatic banding and bundling machine. Tape sticks at a touch; holds firmly; won't scratch or mar surface.



UNITIZE shipments of bagged goods with "SCOTCH" Filament Tape. A quick, inexpensive way to reduce damage claims due to load shifting, bulging, vibration.



SPEED APPLICATION with handy "SCOTCH" Brand Filament Tape Dispenser Model H-120. Complete, portable, and compact; saves time and makes application easier.



RADAR SPEED METER measures speed of moving freight car as it enters retarder. Measurement is transmitted to an electronic computer in a control tower. The instrument is sensitive enough to indicate speed of movement of a hand waved past it, or of a man walking alongside track.

Radar Protects Shipments

. . . during humping operations in the North Platte yard of Union Pacific Railroad

AN electronic device developed for directing guided missiles now directs freight cars . . .

Union Pacific Railroad, at its North Platte, Nebraska retarder yard, has installed an automatic system that switches and controls coupling speeds of freight cars. Called the "Electronic Yardmaster", the system promises to virtually eliminate impact damage which so often occurs to boxcar lading when human errors are made in humping operations.

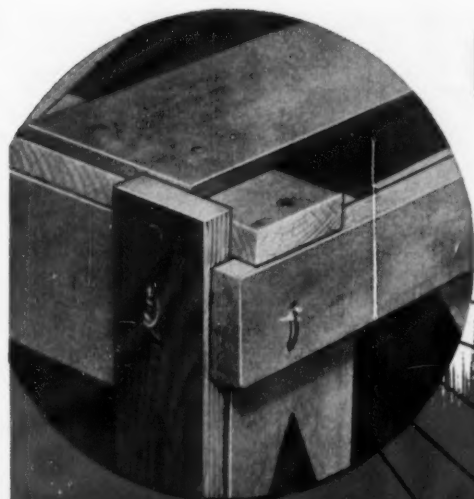
Automatic System Works Smoothly

A long string of freight cars can be pushed up over the hump of the huge classification yard at North Platte and, as each car is uncoupled to start its descent down the incline to tracks of the yard, the switching and control of speed is done automatically.

As the car rolls down the incline, its rolling characteristics are determined electrically and transmitted to an electronic computer as a rolling coefficient. The distance which each car has to roll to couple with other cars standing on the classification tracks (as much as two-thirds of a mile) is computed and also fed to the computer. The system is able to determine the correct speed at which the rolling car must be retarded and released to reach its impact point at a safe switching speed (about three miles per hour).

Each car is slowed down by a series of control tower operated electro-pneumatic car retarders or braking devices on the tracks. The retarder control system releases the freight car at just the right speed to allow it to roll free down the track until it couples with other

(More on page 120)



B-G TIGHT-CORNER HINGE

\$AVE\$

PACKING TIME
STORAGE SPACE
INSURES
SAFE DELIVERY



MODEL A

Pallet box is easily attached to any standard pallet by means of 4 corner irons and flat or round steel straps. Collapsible for storage and quick shipment. We supply corner irons.



MODEL B

This collapsible pallet box has front opening for easy access to contents when stacked or in racks. Furnished with or without self-locking insert panel.



MODEL C

B-G Collapsible, hinged pallet box with drop-leaf panel for greater accessibility. All B-G pallet boxes can be furnished with top cover, if desired.



PALLETS

Hardwood or softwood pallets made in all sizes and styles. Matted with zinc-coated drive cleats.



EXPENDABLE

B-G expendable pallet box, designed to withstand multiple loads. Inexpensive, permitting discard after usage. Top cover, if desired.

BIGELOW-GARVEY'S

EXCLUSIVE TIGHT CORNER HINGE

stands up under scientific laboratory testing!

● B-G CRATES and PALLET BOXES assure you the utmost in STRENGTH and SAFETY in the shipping and storage of your products.

● B-G Containers are SCIENTIFICALLY ENGINEERED and TESTED in our new, modern laboratory, APPROVED by the NATIONAL SAFE TRANSIT COMMITTEE.

● B-G Unique TIGHT CORNER feature makes possible a sturdy, collapsible hinged container assuring GREATEST

ECONOMY in your shipping, handling and storage problems.

● B-G Tight Corner Containers are INDIVIDUALLY ENGINEERED to fit your product.

● B-G invites your inquiries for further information. Sales engineer will call upon request.

● B-G offers without obligation the benefits of 30 YEARS EXPERIENCE in DEVELOPING BETTER, STRONGER and more EFFICIENT Shipping and Storage CONTAINERS.



TIGHT
CORNER
CRATE

The collapsible crate with the exclusive B-G Tight-Corner Hinge. Offers unusual rigidity and strength, yet light in weight. Easily assembled. Nail holes pre-drilled. Made up in 3 parts. Shipped collapsed.



KRAFT
CRATE

Corrugated or fiber board, reinforced with wood slats. Strong and rigid, gives full coverage. Assembles quickly.



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FREIGHT CAR RETARDER has steel bars that grip wheels of freight cars as they roll along. Air-operated pistons apply pressure to brake the moving car to proper speed to insure low-impact coupling.

cars. As the track is filled with cars, the system shortens the range and releases the cars accordingly to compensate for the shortened distance. The speed control is completely automatic. The control tower operator need only select the tracks for which the cars are destined by pushing buttons before a train of cars is pushed over the hump. The control instrument has a memory so great that it can retain simultaneously the routing instructions for as many as 120 cars.

Operates Like Automobile

Operation of the system can be compared to driving an automobile with such skill that on a given signal brakes are applied momentarily with just the right pressure to permit the car to coast for exactly six city blocks, after brakes have been released.

While the pilot system now in use by Union Pacific is for routing only to eight tracks, the completed project will provide automatic control for all 42 tracks in the North Platte yard. As many as 4000 cars will then be handled efficiently and safely in a 24-hour period.



EXIT SPEED from automatically operated retarder determines speed of impact after a free roll of as much as two-thirds of a mile. Electronic Yardmaster

is installed in the control tower in background. Operator in the tower need only push buttons to select tracks. Rest of operation is automatic. (U.P. RR photos.)



Bound to prevent damage

HOW YOU SAVE WITH BRAINARD
TWO-WAY STRAPPING SERVICE

Brainard salesman Jim Brennan demonstrates how strapping tape insures a safe load . . . protects facing of concrete blocks. Full load can be secured in a few minutes.

STRAPPING TAPE



STEEL STRAPPING

In the same cement block yard, Brennan recommends Brainard steel strapping for small sample block shipments. Compact package provides maximum protection in handling.

● Why does Brainard sell both steel strapping and strapping tape? Because Brainard knows there is a place for *both* methods in most shipping operations. Thus, Brainard can give you *unbiased* recommendations . . . and complete service.

For a Brainard strapping analysis, call your nearby Brainard office today, or write Brainard Steel Division, Dept. F-2, Griswold Street, Warren, Ohio.

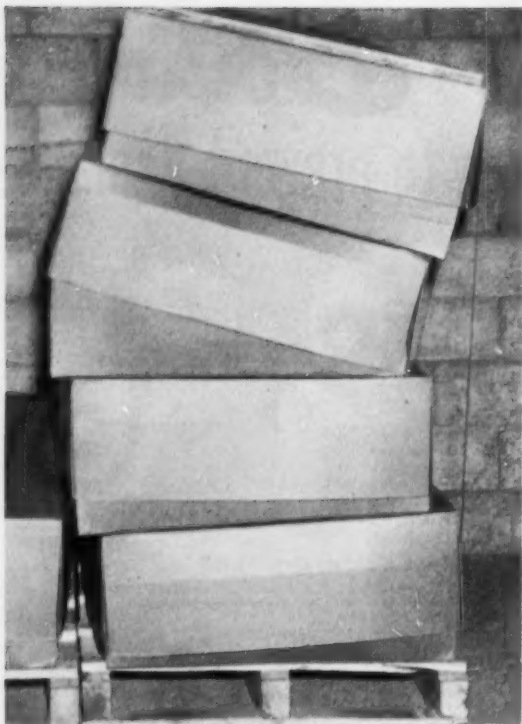
Photos courtesy Facings, Inc., Chicago, Ill.



**COMPLETE STRAPPING SYSTEMS & MATERIALS •
WELDED STEEL TUBING • ELECTRO-GALVANIZED STRIP STEEL •
SCAFFOLDING • PALLET RACKS • BUILDING PRODUCTS**

Offices in principal cities throughout the U. S.

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IN OLD METHOD, bulky nature of product made it extremely difficult to produce unit loads that would remain compact and stable during storage & shipping.

8-WAY SAVINGS FROM THIS . . .

Unitizing

NEEED for a more stable package led to the initial engineering of a new piece of equipment for the production of unit loads at Fisher-Norwalk Company, Norwalk, Ohio. But as the full effect of the device became apparent, a completely new handling, packaging, and shipping system was developed.

Fisher-Norwalk produces automobile floor carpeting, which, because of its bulk, is difficult to handle and pack. Carpets are shipped in corrugated, telescoping boxes to distant car assembly plants.

Until about a year ago, the firm's practice was to strap boxes four-high on pallets. Boxes were loaded by hand, stacked and strapped by hand. To tension loads evenly was difficult, regardless of the number of men employed. At best, it was hard, slow, manual work, and the unit load was never completely stable. It shifted in transit and could not be relied upon for warehouse stacking.

Then Fisher-Norwalk engineers proposed that a baling press be adapted to produce the unit loads. Working at floor level, it could be utilized with mechanical equipment for the movement of the large unit



IN NEW METHOD, load uniformly compressed and tightly strapped holds shape, allows stacking, protects goods. Here handling at press is by pallet trucks.



WITH LOAD COMPRESSED, single operator passes steel strapping around unit, pulls it snug, and attaches clips. When platen is released, bands tighten securely.

System for Soft Goods

loads. And when the equipment was put into operation it became the key to new efficiency in the packaging and shipping department.

Now, brief, initial experimentation determines the pressure required to unitize five boxes of floor carpets. An indexing mark can be made on the post of the press for short runs—or, for the long term production, equipment can be set to operate to a given load compression level without further attention. The machine is activated by push button control.

Located near the shipping room exit, the press is fed directly by hand lift truck, which stays in position under the pallet during the strapping operation. Delivery of boxes, stacked loosely on pallets, to the press area is by fork or manual lift truck.

When the load is compressed, the operator passes straps around it, pulls them snug, and attaches clips. Upon release of the platen, the pressure of the load is exerted against the straps to produce a uniformly stable, unit package. The strapping operation takes but a few seconds, the entire operation only a few minutes, and manual work is at a strain-free minimum.

Among beneficial results are included:

Secure unit loads which remain intact, rigid and damage-free in carriers . . .

Increased utilization of carrier capacity . . .

Faster shipping which can be more closely coordinated with carrier schedules . . .

Supply of unit loads to customers, which procedure aids at receiving, allows the user greater storage efficiency, and relieves the supplier of the need to store most of the finished inventory . . .

Reduction in number of containers required . . .

Closer control of count since a given number of any carpet can be established for each model . . .

Greater storage capacity without increase in warehouse area . . .

Protection of goods against pilferage . . .

It is suggested by Fisher-Norwalk that the operation can also be conveyORIZED, when production line methods make it practical, because the press can be installed to operate at conveyor height.

Photos courtesy the American Baler Co.



HANDLING BY FORK TRUCK became safer, more efficient when new system was adapted. Conveyor-height mounting could be substituted for floor level

installation shown to integrate press into continuous flow system when desired. Ease of stacking new unit produced greatest saving in carrier utilization.

SIMPLE SYSTEM FOR . . .

Packaging 40,000 Units

A masterfully mechanized packaging assembly line and a properly designed shipping container, used at Brown & Williamson Tobacco Company's Petersburg, Va. plant, have made possible the packaging of 10,000 Viceroy cigarettes in 15 seconds! The firm actually packs 40,000 cigarettes a minute—every day of the week!

The packaging line at Brown & Williamson is as noteworthy for its simplicity as it is for its speed. Just three automatic machines and a well-timed conveyor do the job. The first machine packages loose cigarettes; wraps them in cellophane, seals them with a tax stamp, and puts the finished packs in colorful Viceroy cartons. The second unit is an automatic case-packer; it thrusts fifty Viceroy cartons into the corrugated shipping box. A third machine closes and seals shipping boxes.

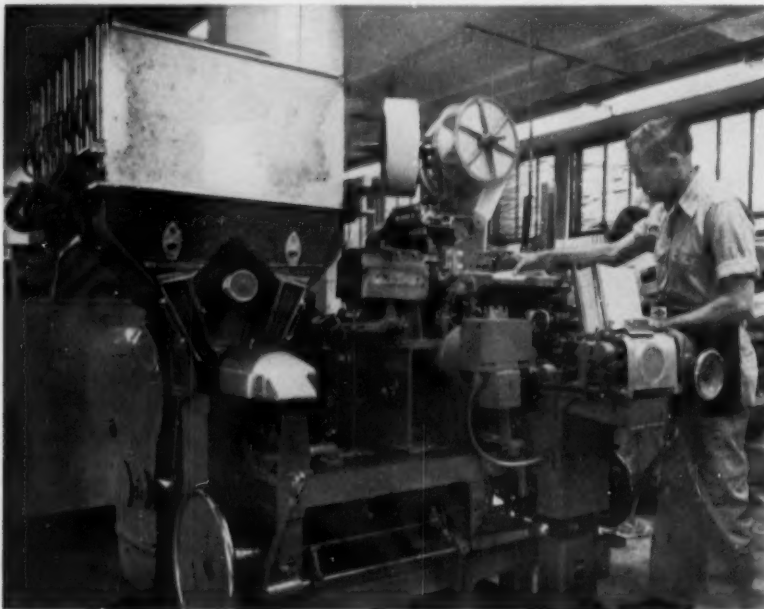
The mechanical nature of the packaging line was largely dictated by the company's volume production. The nature of the shipping container, on the other

hand, was dictated by characteristics of Brown & Williamson's distribution and packaging methods.

Container Selection Factors

With Viceroy's astronomical shipping volume, package weight was an important primary consideration. Made of kraft, the shipping container weighs just one and a half pounds of the gross 38½-pound shipping weight. Other factors which entered into the original choice of a container were: (1) the container material had to be soft enough to prevent slipping off pallets yet hard enough to offer good protection; (2) finished containers had to stack well; (3) the container material must be able to take sealing glue; (4) it had to be exceptionally receptive to printing.

In the actual design of the box, "B" type fluting (end flap) was selected over "A" type (side flap) because it offers more strength when boxes are horizontally stacked.



AUTOMATIC WRAPPER at Brown & Williamson Tobacco Co. counts Viceroy cigarettes into twenties; wraps them in foil, paper and cellophane; stamps them; puts finished packs into cartons.

per Minute!

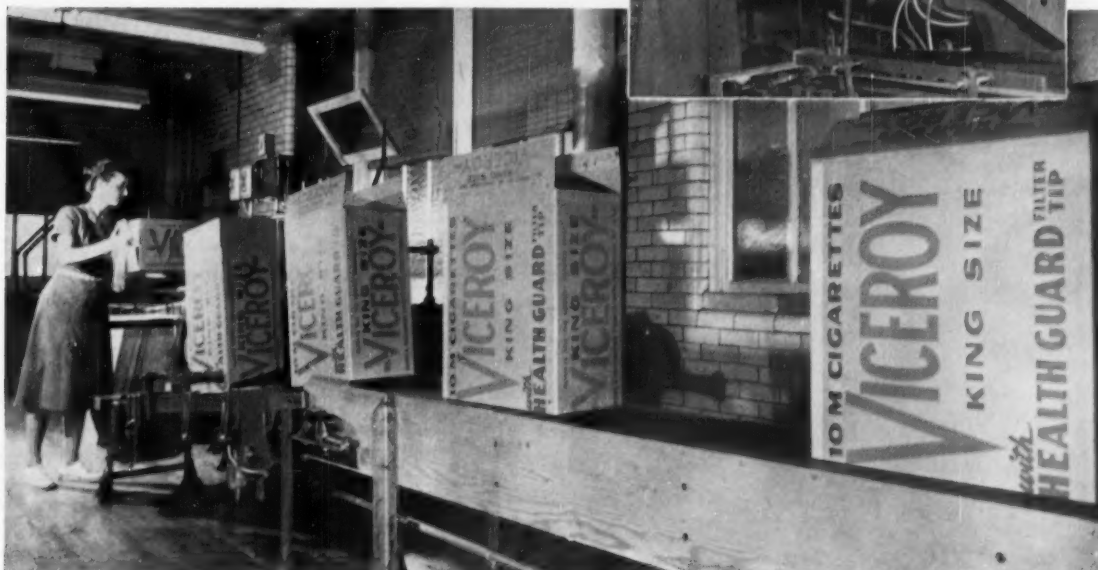
It was found that close quality control was a must as far as container size was concerned. A slightly undersized box, for instance, will jam the case sealer . . . a slightly oversized box will produce a "sloppy" package that neither ships nor stacks well. End flap uniformity is another important consideration. If flaps are too long, they overlap and jam the sealing unit . . . if they are too short, the product will be exposed to dust.

The containers and the packaging system which Brown and Williamson has installed have more than met all requirements. The 50-carton Viceroy packages are rolling off the streamlined assembly line at a rate of four-a-minute, with spoilage and stoppages reduced to a previously impossible minimum.

Photos and data, courtesy of Hinde & Dauch Paper Co.



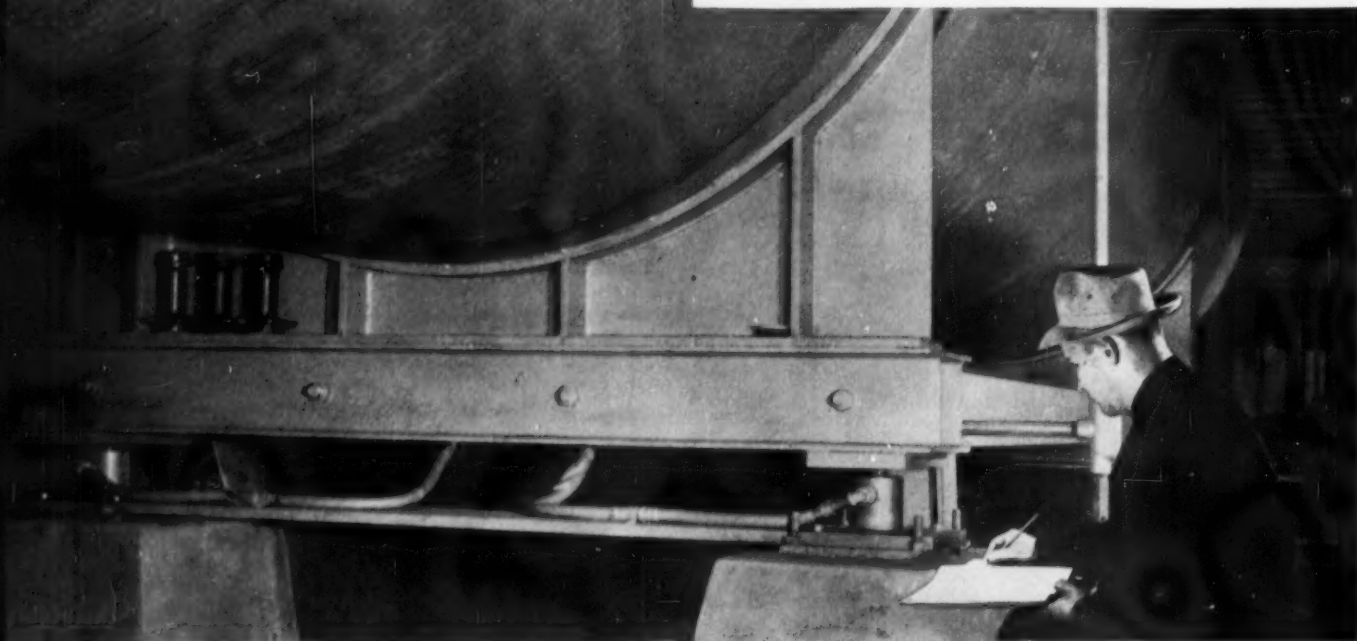
CORRUGATED SHIPPING CASES were designed and constructed especially for the super-speed packaging line at Brown & Williamson. No undersized or oversize containers can be tolerated if efficiency and speed are to be maintained. Here, operator assembles flats into cases, mounts them on the case packing machine.



CASE PACKER (inset) thrusts cigarette cartons into shipping cases, 25 at a time. It loads four boxes per minute. Filled cases are merely lowered onto belt conveyor

which carries them to sealing machine. Completed package contains 10,000 cigarettes and weighs 38½ pounds. Box itself weighs only 1½ pounds.

Remote Weighing



CONTINUOUS WEIGHING of massive tanks containing Freon at Stanley Home Products, Inc. is made possible by two compression-type load cells. Tank supports are designed to prevent thermal stresses from causing side loads on cells. Electrical cables connect with recorders and indicators which help control flow of Freon in and out of two storage tanks.

STRIP CHART RECORDERS, in filling area, show rate of consumption of Freon which is being deposited into insecticide cans. Filled cans are conveyed to adjacent capping machine so that evaporation loss is negligible.

for Better Handling

... in Filling Pressurized Cans

The propellant for pressurized cans must be handled out of tank cars, into and out of storage tanks and into containers. Close control is required to prevent costly leakage and evaporation losses.

THE recent growth of pressurized dispensers for an almost uncountable variety of household products has brought about many new handling problems. For instance, Freon (a propellant for pressurized cans) is a gas or vapor at normal atmospheric temperatures and pressures, but must be contained largely in liquid form under pressure until it is finally dispensed from the can.

At the Easthampton, Mass. plant of Stanley Home Products, Inc., Freon is stored in two 15,000 gallon capacity tanks. They are designed for a maximum pressure of 200 psi, but pressure is normally under 50 psi. One of the most difficult problems confronting plant engineers when the packaging line was installed was in the handling of large volumes of the material in and out of the tanks.

Disadvantages of Large Quantities

When a single mechanized production line is being run at maximum capacity (continuously for a week) more than 15,000 gallons of Freon are used. This requires unloading two or three 6000-gallon tank cars. In using such large quantities, leakage and evaporation losses were apt to be high unless unusual precautions were taken in unloading, in feeding production lines, and even in guarding against system leaks.

Adequate precautions require a constant record of stored and used quantities of Freon. Such records give a means of determining whether there are losses during periods when no material is being withdrawn. Also, they give a check of the extent of evaporation losses in the filling operation.

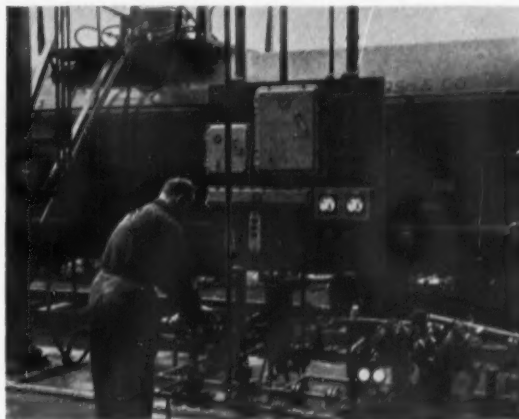
Solution to the Problem

A solution to the problem was developed with the installation of a continuously recording and weight indicating system to control the contents of the two 15,000-gallon tanks.

It was found that weight is the most satisfactory measure of stored quantities because it is not affected by pressure and temperature. Although glass sight-gages have been provided on the ends of the two cylindrical tanks, they give only a rough check on the amount of Freon contained. This is because volumes in the liquid and vapor phases vary widely with the quantity in the tank and with changing temperatures.

Continuous weighing of the two tanks, which may weigh as much as 200,000 pounds each, was simplified by the use of two small compression type load cells each with 50,000 pounds capacity. They are

(Continued on page 137)



WEIGHT INDICATORS on control panel at trackside show quantity of Freon in storage tanks. This information is used to control emptying of tank cars. (The pump is shut down when a tank contains 13,500 gallons, as control is set to weight of that amount.)



“Home-Made” Box Making System

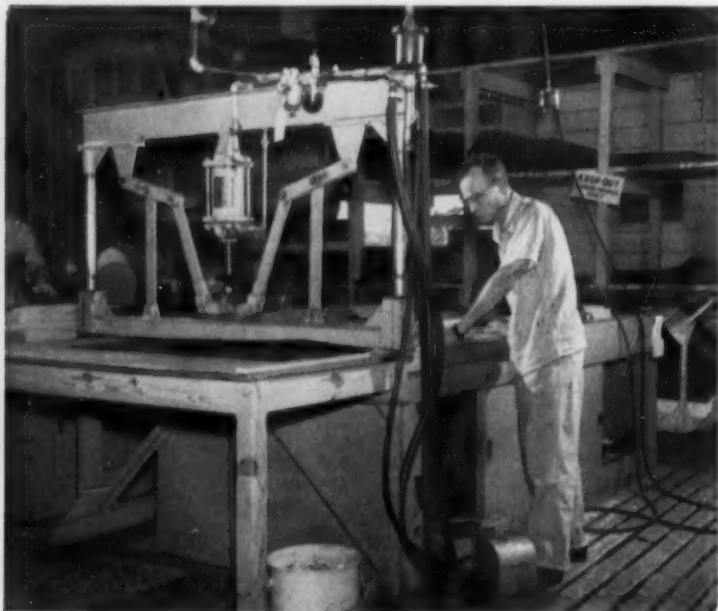
WHEN TEMCO Aircraft Corp. decided it was too expensive to stock corrugated shipping cartons for its hundreds of varied and changing products it developed a method of making its own cartons as they were needed. That the project was successful is proven by annual savings of up to \$15,000.

Three major pieces of equipment make up the carton manufacturing set up. Two of them, a 36-inch band saw and a portable stapling machine, are conventional marketed items. The third is a lay-out and bending machine developed by TEMCO engineers. It resembles a press brake and performs much the same function. A five-inch bore, five-inch stroke air cylinder,

operated by floor pedal, actuates the brake blade.

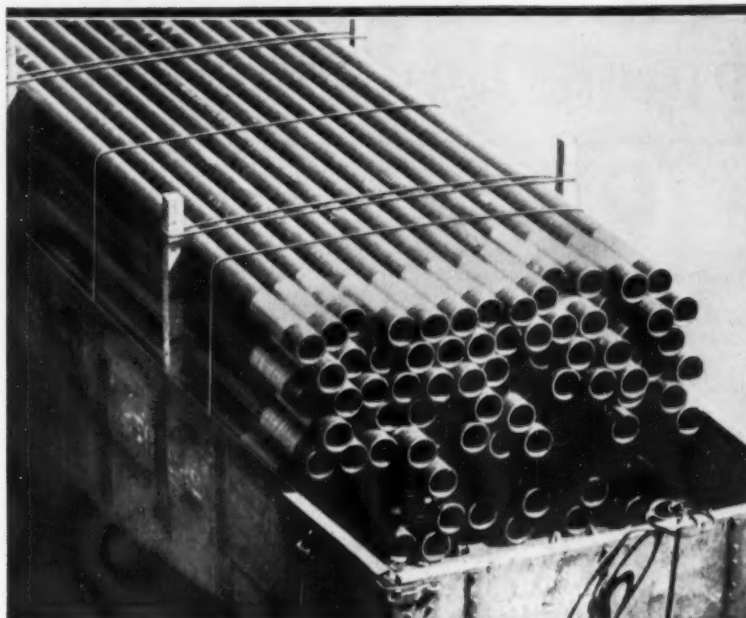
Carton-making is a one-man operation. The operator places the right size corrugated sheet on the table (onto which the press brake is mounted). A six-foot rule along one edge of the table helps him lay out bend lines. The press brake indents the cardboard sufficiently to break down the corrugation, but not to damage waterproofing.

The operator cuts the carton corners on the band-saw, then folds and staples the box with the automatic stapler. One man can turn out up to 150 boxes a day, each one a different size. If carton size is standard, a day's production rate goes up to 250 or more.



BEND LINES on sheet of corrugated board are formed by five-foot brake blade which operator actuates with floor pedal. Frame members which join air cylinder to blade have a toggle action which virtually doubles pressure to blade.

USS Gerrard ties *ANYTHING* you've ever seen



- USS GERRARD Strapping, Round or Flat, is available in a wide range of sizes—tailored for every tying application from small parcels to palletizing, unitizing, crating, and carloading.
- USS GERRARD Round Strapping costs about 40% less than any other form of metal reinforcement.
- USS GERRARD hand-operated and semi-automatic machines tie quickly, efficiently.
- USS GERRARD-strapped bundles and pallets can be handled with greater safety in less time. Accidents averted, man-hours saved.
- Steel-strapped bundles require only one inventory. No loose pieces. Pilferage eliminated.
- Single-source buying of both Round and Flat Steel Strapping reduces freight charges and paper work.

Bring your packaging and tying problems to USS GERRARD. Our engineers will help you solve them—at no cost to you.

GERRARD STEEL STRAPPING DIVISION, UNITED STATES STEEL CORPORATION
General Offices: Chicago, Illinois

SEE The United States Steel Hour. It's a full-hour TV program presented every other week by United States Steel. Consult your local newspaper for time and station.



USS GERRARD

Round and Flat **STEEL STRAPPING**

UNITED STATES STEEL

CARLOADS
OF STEEL PIPE
TO
CARTONS
OF CATERPILLAR
TRACTOR PARTS



**SEND FOR THIS NEW
FREE BOOKLET NOW**

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Please send me, free of charge, the new
36-page GERRARD Blue Book of Packaging.

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Company.....

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State.....

Circle No. 101 on Reader Service Card for more information

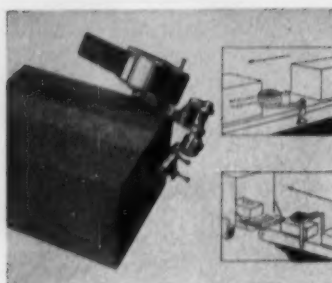
WHAT'S NEW... in Packaging and Shipping Equipment



Controlled Reinforcement

A new moisture resistant barrier, with "controlled pattern" reinforcement, has been developed by Thilmany Pulp & Paper Co. The protective paper is constructed of two outer plies of kraft, asphalt coatings on both outer plies and crossed fibres evenly spaced in a controlled pattern for all directional tear and puncture resistance. Extra edge strings provide added tear resistance. It is available in widths up to 120 inches.

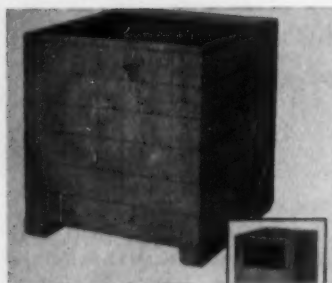
Circle No. 179 on Reader Service Card for more information



Quick-Change Automatic Case Marker

A version of the Rolacoder imprinting machine which can be used for automatic addressing of shipping cases has been introduced by Adolph Gottscho, Inc. Incorporating a "zip-change" mechanism and using low-cost rubber dies, the marker enables shippers to mark as few as a dozen cases with the same address, then quickly change the address die for the next lot of cases. The unit may be attached to any fixed or portable conveyor.

Circle No. 180 on Reader Service Card for more information



Multi-Purpose Wirebound

This pallet box, manufactured by General Box Co., is designed for many jobs: (1) On production lines, it is a smallparts hopper, or an assembly bin; (2) For intra-plant transportation of parts, it becomes a shipping container; (3) By removing a front section, it becomes a storage bin in which contents are easily accessible. Skids are varied in design to meet any industry need. The boxes can carry loads of 1½-2 tons and can be stacked three or four high.

Circle No. 181 on Reader Service Card for more information



Stapler Needs No Anvil

Fastener Corp. now manufactures a hand-stapler which operates without the use of an anvil. For use, the device is simply positioned at the point where a staple is needed and the handle is compressed. A special mechanism diverts staple legs out and up in a clinching action, without the use of an anvil base. Its use is restricted to soft materials like corrugated, cardboard and fabrics; for jobs like attaching tags and labels, securing insulation, etc.

Circle No. 182 on Reader Service Card for more information

(Continued on page 138)



Cuts
Costs
70%

Man with stapler beats man with glue 10 to 1

This actual race took place in a rubber products plant. The man at left sealed cartons with glue. His companion used a Bostitch Autoclensh Stapler, and averaged 10 times more cartons per hour. The manager happily reports savings of 70% in time and materials.

His shipping men are happy too. Gone are the gluepots, dripping brushes, spattered aprons. No more "glue-cake" on floor or hand truck. No "weighting" of sticky carton flaps. Cartons go off faster, cleaner, and can be re-used. And as the men are paid on piecework, take-home pay is bigger.

The Autoclensh is just one of 800 kinds of Bostitch staplers that trim time and costs on thousands of different fastening jobs in factory and office. To help you fit the right stapler to the right job, Bostitch has 325 Economy Men working out of 123 cities in the U. S. and Canada—by far the largest and best trained group of its kind.

Check over your own fastening methods with your nearest Economy Man. There's no obligation. He'll be glad to tell you honestly whether stapling can save you money.

Look up "Bostitch" in your phone directory or write us.

**FASTEN IT BETTER
AND FASTER WITH**

BOSTITCH®

STAPLERS AND STAPLES

FREE time and money saving bulletins tell how stapling can cut your costs.

BOSTITCH, 702 Mechanic St., Westerly, R. I.

I want to fasten:

☐ cartons ☐ plastics ☐ wood ☐ leather
☐ rubber ☐ light metals ☐ fabric ☐ roofing

Name

Company

Address

City Zone State

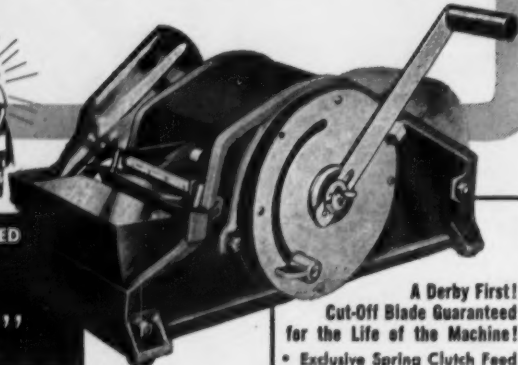
Circle No. 21 on Reader Service Card for more information

THE MOST TALKED ABOUT GUMMED TAPE DISPENSER ON THE MARKET!



THE MEDIUM PRICED

Super
DERBY "152"



PRICED FAR LOWER THAN ANY COMPARABLE MACHINE!

Derby spent 2 years designing, building and testing the fabulous Super "152." It's a rugged, efficient, gummed tape dispenser with so many big machine features, so many unusual Derby exclusives, that its low price is truly sensational!

See your dealer or write Dept. F

DERBY SEALERS INC. Derby, Conn.

A Derby First!
Cut-Off Blade Guaranteed
for the Life of the Machine!

- Exclusive Spring Clutch Feed
- Feed Stop for Predetermined Lengths up to 30"
- Dispenses 1" to 3" width
- Auxiliary Water Reservoir
- Single Brush Moisture Control System
- Adjustable Variable Length Slotted Handle
- Interlocking Side Frames
- Automatic Tape Cut-off
- Visual Measuring Scale

What's New . . .

in Packaging & Shipping
Free Literature

Protective Cushioning:

Nichols Paper Products Company extends an offer to consult with them for planning the packaging of products with Sof-Rap protective cushioning. A bulletin from this company fully describes Sof-Rap, and illustrates a number of ways it can be applied to assure greater product protection in storage, handling or transit.

Circle 188 on Reader Service Card

Automatic Packaging Machine:

The addition of net weight scales to the latest version of the Stokes and Smith Stokeswrap automatic packaging machine is the feature of a new two color illustrated bulletin.

Circle 189 on Reader Service Card

ARROW TACKERS

**FASTER, EASIER, NEATER,
MORE EFFICIENT**

No. HT-50

TAGS AND LABELS ARE
ATTACHED IN A JIFFY.

3 MODELS
TO CHOOSE FROM.
USES STAPLE SIZES UP TO
9/16" LEG.

HANDY FOR FASTENING
PROTECTIVE LININGS AND
PADDINGS IN CLOSE CORNERS.

No. T-50

SOLD AT HARDWARE, BUILDING, LUMBER
DEALERS AND INDUSTRIAL TOOL SUPPLIERS.
WRITE FOR CATALOG

ARROW FASTENER CO., INC.
ONE JUNIUS STREET, BROOKLYN 12, N. Y.

Circle No. 249 on Reader Service Card for more information
132



This "free" file-folder kit will show you

How to modernize your shipping operations

NOTHING LIKE IT EVER BEFORE. Not a catalog of products, but a file-folder of systems created to streamline shipment addressing and product identification marking, and simplify shipping paperwork. It describes and illustrates how to address and mark shipments faster, cheaper, and with less errors . . . how to tie-in addressing operations with preparation of shipping paperwork . . . and many other methods for making your shipping operations more efficient at a lower cost.

Weber

GET YOUR COPY OF THE WEBER LABEL AND MARKING SYSTEMS FILE-FOLDER KIT RIGHT AWAY. NO CHARGE OR OBLIGATION.

label and marking systems

Division of Weber Addressing Machine Co.
Dept. 1B, Mount Prospect, Illinois
Phone: CLearbrook 3-2405

Circle No. 78 on Reader Service Card for more information
FLOW

Heavy Duty Strapping:

Pictures and detailed descriptions provided in a six-page brochure on the Bulkholder line of heavy duty strapping, strapping tools and accessories produced by A. J. Gerrard & Co. The products are intended for carload bracing, export crating, palletizing, other heavy-duty unitizing uses.

Circle 190 on Reader Service Card

Speedy Bag Packager:

A bag packager which is said to cut labor costs as much as 80 percent is described in a folder by Errich International Corporation. The unit is air operated.

Circle 191 on Reader Service Card

Cartridge-Filled Marker:

Uses for Feather-Mark felt-tip pens and quick-drying inks in factories, shipping rooms, offices and warehouses are suggested in a leaflet by Binney & Smith, Inc. These are filled by sealed cartridge in a matter of seconds.

Circle 192 on Reader Service Card

Tank Heating Facts:

Colorful brochure from Aeroil Company gives facts about processing tanks for heating, melting and dipping plastics, critical waxes and similar compounds. Built to rigid specifications, the tanks are sold with a full year's guarantee.

Circle 193 on Reader Service Card

Automatic Nailing:

National Nu-Matic Nailer, Inc. tells about its automatic nailing tool, said to be unexcelled in pallet making, crating and boxing.

Circle 194 on Reader Service Card

Heavy Duty Strapping System:

Various models of steel strapping tools and accessories are shown, along with technical data, in a new brochure from the Gerrard Steel Strapping Division of U. S. Steel Corp. Methods to unitize large and heavy loads are stressed.

Circle 195 on Reader Service Card

SAVE TIME AND MONEY HANDLING UNITIZED LOADS



... specify delivery on MEAD CHESTNUT POKE-PAK

If you have a fork truck, order your unitized loads shipped on Poke-Pak, MEAD's sturdy, rigid loading base made of chestnut and other hardwood fibers. You'll be able to unload your orders in a fraction of the time it takes now, and you'll be done with returnable pallets and their freight charges—Poke-Paks cost so little you can throw them away after use. With

Poke-Pak there is less chance of damage during delivery—no nails or splinters to cause punctures and, because of low center of gravity, no loads that tip. The use of Poke-Pak also simplifies inventory taking. MEAD Chestnut Poke-Pak is adaptable to any loading process, including the new Pull-Pak equipment. For complete information, write for a folder.

NOTE TO SHIPPERS: With Poke-Pak just the ends of the car have to be lined; you have no credits or charge-backs on returnable pallets; you load in less time; and you reduce storage space—60 to 70 ft in the space needed for one wooden pallet. Carloading diagrams, bag patterns, and samples supplied free.

MEAD BOARD SALES, INC.

River Road, Lynchburg 3, Va.

Sales Offices: 3347 Madison Road, Cincinnati 9, Ohio; 6124 No. Milwaukee Avenue, Chicago 30, Ill.; 10 Commerce Court, Newark 2, N.J.; 18045 James Couzens Highway, Detroit 35, Mich.; 43 Leon Street, Boston 10, Mass.

Circle No. 145 on Reader Service Card for more information



THE ANSWER...



-to many BAG CLOSING problems!

SEND for this new BULLETIN No. 201 which illustrates and explains how *Union Special Suspended Head Bag Closing Machines* can supply the answer to bag closing problems in small plants and large operations. Don't handicap your production with equipment that has limited capacity!

Union Special Bag Closers are designed to handle bags of heavy weight as well as light weight materials. These units are portable. Delivered to you complete with integral motor, thumb controlled clutch, automatic brake—ready to hang up, plug in, and go to work.

Union Special SUSPENDED HEAD BAG CLOSING MACHINES

Union Special MACHINE COMPANY
415 N. Franklin Street, Chicago 10, Illinois

Gentlemen:

Please send me your new free Bulletin No. 201 describing Union Special Suspended Head Bag Closing Machines.

Name _____

Address _____

Company _____

Circle No. 99 on Reader Service Card
134

CRANES . . .

(Continued from page 96)

is absolutely necessary.

Equipment for mechanical harvesting most popular in past years has been a grab-like device used on mobile power cranes. The grab which pulls cane loose from its growing position consists essentially of a number of tines capable of handling close to one ton of cane per lift.

Lately, though, a new method has been used to increase further the efficiency of the crane-grab as a material handling tool. It employs the tractor mounted push-rake, a bulldozer type of machine with a rake of forks having cutter blades. It cuts, then pushes cane into windows. Mobile cranes with grabs then more easily load the cane into rail cars, trucks or the newer cane haulers.

(This operation takes place after cane has been set afire to destroy insects and burn off leaves and trash which would interfere with milling operations. The fire does no harm to the stalks full of sugar juice.)

Most plantations have operated permanent narrow gauge railroads and laid down portable tracks into fields, after burning, where loading cannot be directly onto cars of the permanent line. Cane cars on field lines have been hauled by crawler tractors.

An advance from this system was the substitution of tracks and trailers for the temporary trackage. These vehicles transport cane to rail lines. In some operations,



SUGAR beet transferred from barge to truck to mill. (Holland)

Circle No. 111 on Reader Service Card

"We don't need gloves!"



when hand wrapping with
Flexible SOF-RAP

You can speed up wrapping production with low cost, lightweight SOF-RAP. Men work "bare-handed" with no danger of cuts or bruises — no slow-downs from clumsy gloves. SOF-RAP contains no harsh cutting gloves or silicates. That's why, too, it provides the perfect cushion protection for your product. Investigate TYPE C for interior cushion protection from shock and bounce and TYPE B for permitting slippage and preventing friction or abrasion; damage. In sheets, rolls, tubes and bags.

FREE, HELPFUL BOOKLET,



CAPCO DOCK COVERS GIVE YEAR 'ROUND PROTECTION

CAPCO Dock Covers completely enclose the space between car and building doorways protecting loading and unloading during bad weather — preventing accidents — insuring against loss of heat or refrigeration. 51 different models in any size for every loading problem.



Write for literature and name of nearest distributor.

CAPCO

622-24 PROSPECT AVENUE • KANSAS CITY 24, MISSOURI

Circle No. 68 on Reader Service Card
FLOW

trucks and gondolas are equipped with chain cargo nets with which to dump or roll the load.

The latest technique is the combination of the push-rake, crane, crane and grab with cane haulers, trucks and trailers—dump body and rack types—which take the material directly to the mill.

Most of the operating equipment has motor generators to run lights for night work.

Radio Communication is also employed to keep the job fully coordinated.

Some of the crops, still necessarily cut by hand, are piled in sling loads of about a ton each. These may be hauled to the roadside by cranes equipped with long cable measuring up to 500 feet. Loads may be left intact with the sling and loaded onto trucks on the next shift, by the same crane. Or the sling may be removed and the material handled by a crane and grab.



HAND bundling still practiced, but loading is mechanized. (Mexico)

Cane is also still bundled and sent down flumes—the traditional method in Hawaii—when weather or terrain make it advisable.

Cleaning up fields is an important operation. Raking is either by drag-line with rake or with grabs on mobile cranes.

At many mills, derricks and cranes unload carriers into storage pits, or on stockpiles—load cane on the conveyor feeder. Haulers are also discharged from unloading ramp for further handling by crane and grab.

FLOW thanks Thew Shovel Co. for pictures and data, and the following firms for pictures: Baldwin-Lima-Hamilton Corp., Bucyrus-Erie Co., Coles Cranes, Inc., Harnischfeger Corp.



WHAT'LL THEY THINK OF NEXT!

As your products change, so do your protection problems. You can imagine the hazards encountered in shipping this new-style "wrap-around" windshield glass. Gaylord solved the problem with a practical, efficient corrugated container.

At your nearby Gaylord sales office you'll find men who enjoy tackling unusual protection problems. Call them today!



CORRUGATED AND SOLID FIBRE BOXES
FOLDING CARTONS • KRAFT PAPER AND SPECIALTIES
KRAFT BAGS AND SACKS

GAYLORD CONTAINER CORPORATION • ST. LOUIS

SALES OFFICES FROM COAST TO COAST ★ CONSULT YOUR LOCAL PHONE BOOK
Circle No. 167 on Reader Service Card for more information

S.I.P.M.H.E. Juggles Officer Line-up

Several important changes in the line-up of national officers of the Society of Industrial Packaging and Material Handling Engi-

neers have been announced by Earl B. Candell, President.

John Mount, Insurance Co. of North America, formerly secre-

tary, has been named vice-president to fill the unexpired term of A. C. McGeath who died earlier this year. Robert C. Cragg, Gould Storage Battery Corp., a SIPMHE national director since 1949, has succeeded Mount as secretary.

M. C. Weisenhorn, Jiffy Mfg. Co., was named treasurer to succeed M. A. Grogel, who resigned. W. B. Lincoln, Inland Container Corp. has been appointed a national director of the society.



Robert C. Cragg



M. C. Weisenhorn



John Mount

COURSES IN MATERIALS HANDLING

AT THE SCHOOL OF MATERIALS HANDLING
IN THE BEAUTIFUL COUNTRYSIDE OF KENT, ENGLAND
FOR ALL LEVELS OF MANAGEMENT AND FOR PRIVATE STUDENTS

Come and spend a few weeks with us and study, both in theory and practice, this important subject. The fees are fully inclusive covering full tuition, first-class accommodation and cuisine, club membership and extensive recreational facilities.

12 Week Residential Course— Work Study and Materials Handling	\$1200
6 Week Residential Course— Materials Handling	\$ 650
6 Week Residential Course— Work Study and Materials Handling	\$ 650
3 Week Residential Course— Materials Handling	\$ 350
2 Week Residential Course— Materials Handling	\$ 250

**WRITE FOR FULLY ILLUSTRATED BROCHURES WITHOUT
DELAY TO: THE REGISTRAR, SCHOOL OF MATERIALS HANDLING,
DIVISION OF THE COLLEGE OF PRODUCTION TECHNOLOGY,
SWINFORD OLD MANOR, NR. ASHFORD, KENT, ENGLAND**

Circle No. 31 on Reader Service Card for more information

REMOTE WEIGHING . . .

(Continued from page 127)

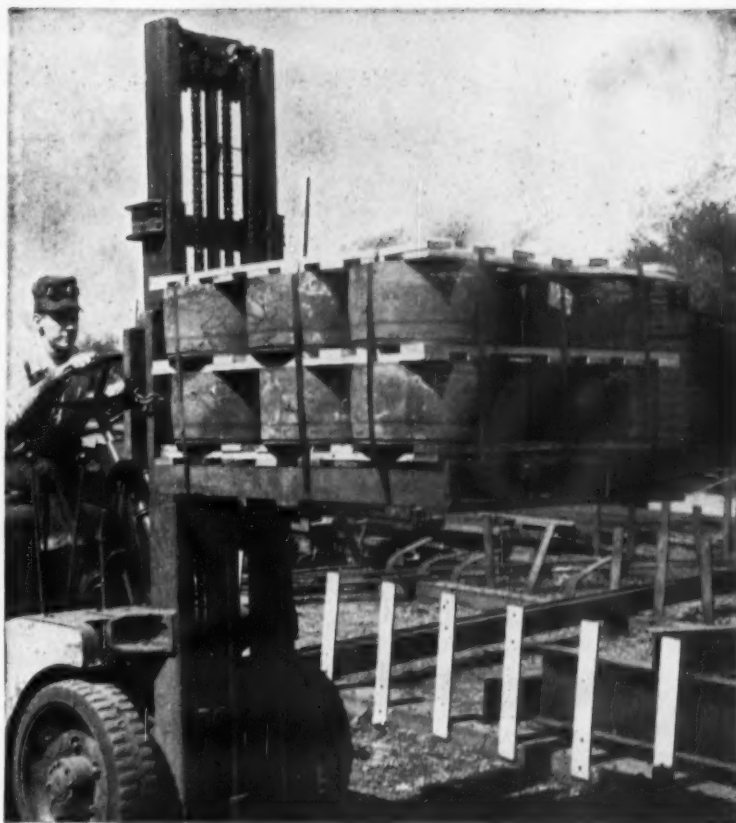
mounted as supporting members on concrete bases at one end of each tank. With the two cells, the load is measured electrically through simple amplifying electronic circuits.

By leveling the 40-foot long, eight-foot diameter tanks, the two cells support exactly half of the load, but the instruments are calibrated to read only the weight of the Freon in the tanks. Weight of the tank and the supporting structure are "zeroed" out. A lowering of weighing accuracy is eliminated by the use of reinforced flexible hose at both inlet and outlet. The resulting accuracy in weighing is within one-half of one percent.

Instrumentation has provided for weight indications at three points. One of these points is beside the can filling position on the production line. This is at the north wall of the building outside of which the two storage tanks are sheltered. Two strip-chart recorders with 1000-pound divisions (approximately 85 gallons per division) are positioned inside the wall. On the outside wall, at a point between the two tanks, are mounted two indicating instruments with 5000-pound divisions. Two identical indicating instruments are located at the tank car siding at considerable distance from the storage tanks. The motor driven pump at that location is under the control of the weighing system to the extent that it is shut down automatically when a weight corresponding to about 13,500 gallons is in the tank. The tanks are never completely filled.

To fill the pressurized cans, Stanley Home Products Co. has an extremely high-speed production line. Cans may be filled with 10.2 oz. of Freon chilled to -30 degrees F. and sealed at a rate of 120 per minute. (Since the can is sealed within a few seconds after filling, the evaporation loss is quite small.) At this rate, Freon is taken from the tanks at a rate approaching 5000 pounds per hour, or more than 37,000 pounds per eight-hour shift.

Photos and information in the preceding article through the courtesy of Baldwin-Lima-Hamilton Corp.



Signode unitizing method speeds truck handling of heavy castings

A manufacturer in Alabama sought a safer, lower cost way to ship heavy-wheel castings by motor truck to Michigan. With the co-operation of Signode's fieldman, a special unitizing pallet pack was developed. First, a heavier, stronger pallet was built. Two layers of castings, separated by a wood frame, and similarly capped, were strapped to the pallet. Six bands of Signode steel strapping, spaced for maximum unitizing efficiency, were applied. The new method of shipping saved time in loading and unloading. Handling safety was greatly increased. Cost of the pallets was self-liquidating, because the receiver bought them for inplant handling and storing of castings, and for intraplant shipping.

Get in touch with your Signode Fieldman! He will be able to show you, too, how to make important savings in packaging, handling and shipping your products through the six basic unitizing methods. Quickest way to reach him is to write

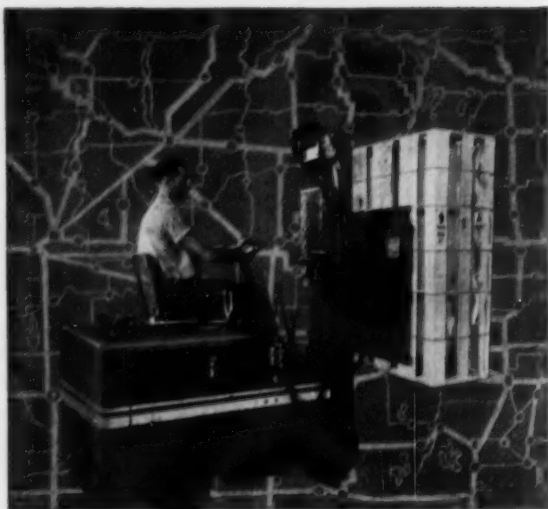
SIGNODE Steel Strapping Co.

2618 N. Western Ave., Chicago 47, Ill.

Offices coast to coast—Foreign subsidiaries and distributors world-wide.

In Canada: Canadian Steel Strapping Co., Ltd., Montreal • Toronto

Circle No. 35 on Reader Service Card for more information



Your handling goes modern
when your product goes

WIREBOUND!



It's easy to see how you put new life in your handling operation when you put your product in a Wirebound. For with Wirebound's unique construction of strong steel wire and light, tough wood—your product gets the best in protection while you get a container that adapts to an infinite variety of handling procedures. Just how well Wirebounds suit up-to-date handling methods is shown above where a heater manufacturer moves Wirebounds with a finger-lift truck to achieve easier, speedier storage in really close quarters. Remember—no matter what you handle or how you handle it . . . you'll handle it better when it's a Wirebound box, crate or pallet box.

Wirebound
BOXES & CRATES

MAIL THIS COUPON NOW!

WIREBOUND BOX MANUFACTURERS ASSOCIATION

Room 1171, 327 South LaSalle Street, Chicago, Illinois

- ☐ Have a sales engineer give me the whole story
☐ Send me a copy of "What to Expect from Wirebounds"

Name _____

Firm Name _____

Address _____

City, Zone and State _____

Circle No. 42 on Reader Service Card for more information
138

PACKAGING & SHIPPING

NEW EQUIPMENT . . .

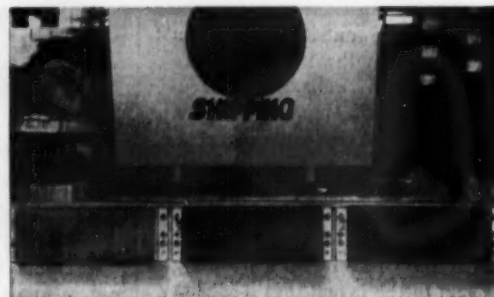
(Continued from page 130)

Rubber Drum Liners

The Automotive Rubber Co., Inc., is producing removable rubber drum inserts for standard 55-gallon drums. Trade-named Drumserts, the pre-formed liners are made of ARco-compounded neoprene or sheet rubber. For use, a liner is merely set in the drum. A "lip" fits over the top of the drum. It is pulled taut and the Drumsert grips the drum so that it maintains a stationary position regardless of handling. It is claimed that with the liners, any 55-gallon drum or barrel can be used for handling acids and other corrosive materials. Liners can be removed from drums in a matter of seconds by merely peeling the "lip" that laps over the sides.



Circle 183 on Reader Service Card for more information



Save DOCKS and TRUCKS

DURABLE resilient rubber Loading-Dock Bumpers absorb the BUMP when truck and dock come together—

- Prevent damage to truck bodies.
- Eliminate replacement of dock timbers.
- Protect fragile freight—reduce claims.
- Easy to install.

DURABLE products will save you money.

DURABLE

MAT COMPANY

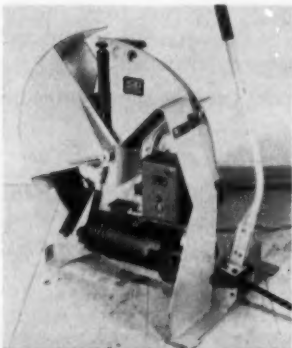
75 North Pleasant St.
Norwalk, Ohio

2926 16th St., S. W.
Seattle 4, Wash.

Circle No. 48 on Reader Service Card for more information
FLOW

Powered Strapping Dispenser

A power-operated band dispenser, developed by Acme Steel Co., is claimed to reduce considerably the time required for preparation of cut-to-



length strapping. It feeds strapping from coils at a rate of 250 feet per minute. Operation is simple—the operator need only move a single lever to feed and cut the desired length. A magnet brake has been applied to the unit in order to prevent strap over-run. The motor requires either 220 or 440 volt,

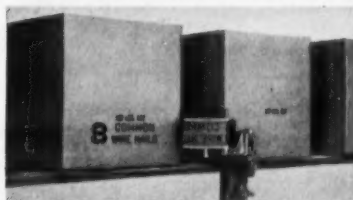
three phase, 60 cycle current. The dispenser was developed to hold a ribbon wound coil of 3/4-inch, 1 1/4 inch, or two-inch strapping. Shear blades can be resharpened on a surface grinder.

Circle 184 on Reader Service Card for more information

Need To Mark Floors?

A new Florline marking machine has been developed by the H. C. Sweet Company which makes safety and parking lines at walking speed.

Low-cost case marker saves \$



pays for
itself in
weeks!

ROLACODER Imprinter attaches to conveyor or case-sealer



Now you can do away with that costly extra operation for manual rubber-stamping or stencilling of code-dates, lot numbers, contents descriptions, etc. on cases...or reduce big inventories of completely printed cases...and save thousands of dollars annually. Use an inexpensive ROLACODER machine to mark your cases automatically on the production line. Compact, precision-made ROLACODER is friction-operated, self-inking—makes single, accurately located imprint on each case to register with other copy. Uses quick-change rubber type or dies, holds 8-hour ink supply. Different models available to imprint top, ends, sides of small or large boxes, cartons, cases, other packages.

Write for descriptive literature

Gottsch

ADOLPH GOTTSCHO, INC.
Dept. D, Hillside 5, N. J.

Automatic
CODING, MARKING,
IMPRINTING
MACHINES

In Canada: RICHARDSON AGENCIES, LTD., Toronto & Montreal
Circle No. 119 on Reader Service Card for more information
FEBRUARY, 1955

STAPLING A CARTON THE FAST, EASY WAY with Air!



New **DUO-FAST** AIR PLIER

Lightweight — Easily Portable

OPERATES 50-110 LBS. AIR PRESSURE

No need to take the work to a big, stationary stapling machine. You can use the Duo-Fast Air Plier where it is most convenient—take it to the job.

A flick of the trigger does the stapling job. Ideal for stapling many types of cartons, making corrugated fillers, sealing heavy bags, and many other industrial stapling jobs.

And Here's the Answer to Another Stapling Problem



New **DUO-FAST** OC STAPLER

It Clinches the Staple Without an Anvil!

Just compress the handle. A special mechanism diverts the staple legs out and up in a clinching action. No anvil is needed. Staple does not penetrate the material.

Solves problem of fastening tags to filled cartons, making temporary closings of carton flaps, and other jobs where anvil-type stapler cannot be used. Stapler can be easily converted to an automatic tacker for other jobs.

MAIL
COUPON

for the story on these Duo-Fast Staplers

FASTENER CORP., 860 Fletcher St., Chicago 14

- ☐ Send data on DUO-FAST AIR PLIER
☐ Send data on DUO-FAST OUTWARD CLINCH STAPLER

Name _____
Company _____
Address _____
City _____ State _____

Circle No. 254 on Reader Service Card for more information



**Faster, better
reinforcement for
PARCEL POST*...**

TAPE-STRAP® **Gummed Filament Tape**

Shipping room production stepped up when Chicago Screw Company switched to Tape-Strap reinforcement. Heavily loaded containers are sealed with ordinary gummed tape, then reinforced with super-strong $\frac{1}{2}$ " Tape-Strap.

The Tape-Strapped packages look better, and protection is more effective. Previous reinforcement ... two all-around wire strands ... went on under tension, often cut into containers. Now, only four short strips of Tape-Strap, applied without pressure, provide all the reinforcement needed.

Chicago Screw Company also uses Tape-Strap reinforcement on express and truck shipments. Tape-Strap can't damage the containers and is safer to use. There are no sharp cutting edges. Because Tape-Strap goes on without tension, there's no chance of a spring back, and injury to personnel. No special application equipment is needed.

Find out now how you can cut packaging costs with Tape-Strap. *Write for free sample roll and complete data.*

*Approved April 27, 1954—Postal Bulletin 19735, Page 4

LEADERS IN THEIR LINE

MID-STATES Gummed Paper Company

2511 S. DAMEN AVE., CHICAGO 8, ILLINOIS

Milwaukee, Madison, Philadelphia, Atlantic, Cleveland, Detroit, St. Louis, Springfield

Circle No. 123 on Reader Service Card for more information

140

Called the Upright Model, the machine is designed with a new 2-wheel assembly attached to the barrel which helps the operator make straight lines at faster speeds, since the supporting wheels keep the machine "on track" with practically no effort and a minimum of direction from the operator. The unit can be converted easily to a 2-wheel machine for narrow, crowded areas.

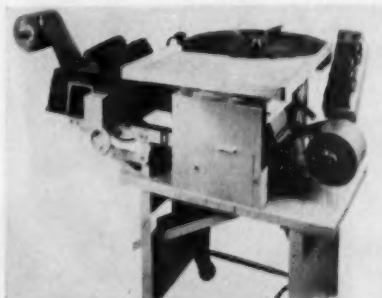
Circle 185 on Reader Service Card for more information

Corrugated Nail Boxes

Gaylord Container Corp. has announced that corrugated nail boxes have replaced wooden nail kegs at Wilson Steel & Wire Co. The new "Nail Pak" is a three-piece telescope box designed for the best and the most economical use of 350-pound fibreboard. It is shipped to the user in flat palletized loads which occupy less than 30% of the space formerly required for keg-type containers. Assembly is done manually by an operator who forms the box halves on standard equipment and inserts "U" pads for bottom strength. The bottom unit is



There's Profit In The Package



An AUTO-PAK machine with automatic feeding and printing devices.

When YOU USE PAK-RAPID Equipment

Eliminate old fashioned manual methods ... package and identify your products automatically in one operation with PAK-RAPID equipment. Versatile AUTO-PAK machines will save you money in investment, maintenance and packaging costs.

PAK-RAPID equipment produces an attractive, completely sealed, flexible package from a wide variety of packaging materials. Consumer and industrial products in both regular and irregular shapes are handled efficiently.

Representatives in principal cities. Contact the one nearest you or, write us direct.

PAK-RAPID INC.

Incorporated 1945

Builders of Fine Packaging Machines
530 N. 21st Street, Philadelphia 30, Pa.

Circle No. 64 on Reader Service Card for more information

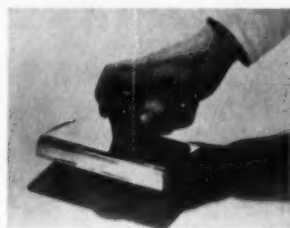
FLOW

filled in a shaker, weighed and glued on all sides before the top is telescoped into position. When filled and sealed, the box has three corrugated walls at every corner and affords smooth surfaces for printing brand and product identification. Opening is by use of a "tear tape". Hand holes are provided in top and bottom halves to aid in carrying.

Circle 186 on Reader Service Card for more information

Cost-Cutting Hand Stamp

The "Copy Stamp" is said to offer a means for economical and efficient marking of many small



parts in large shipments. It is a device already in wide use by corresponding secretaries, civilian defense and many organizations throughout the country and is now being offered for shipping room use by Copy-Stamp.

It is available in two models: Model No. 1 prints an area $1\frac{1}{8}'' \times 3\frac{1}{2}''$; Model No. 2 prints a $2\frac{1}{2}'' \times 4''$ area. Complete equipment accompanies each stamp... there are a dozen stencils and a tube of special "Copy Stamp" ink.

Circle 187 on Reader Service Card for more information

Circle No. 118 on Reader Service Card for more information

FOR
**FAST,
SECURE,
LOW COST**
BAG CLOSING



FISCHBEIN
Portable
BAG CLOSER

- A truly portable bag closer... Weighs only 10½ pounds.
- Requires no installation... plug into any outlet.
- Handles textile and paper bags.
- Simple to operate and maintain.
- Lowest priced bag closer on the market.

FOR DETAILS,
MAIL THIS COUPON NOW
DAVE FISCHBEIN CO.
Dept. 4B
38 Glenwood Ave. N.
Minneapolis, Minn.

Name.....
Firm Name.....
Address.....
City.....
State.....

Only

**AMERICAN
CABLE-LINK
CONVEYOR SYSTEMS**
offer these patented features for
HEAVY-DUTY PERFORMANCES!

American Cable-Link
Conveyor Systems are

- SIMPLE
- ECONOMICAL
- FLEXIBLE
- DURABLE



No special tools needed
for fast, accurate, de-
pendable installation!

**TRIED, TESTED,
PROVED AND
PERFORMING
IN ALMOST
EVERY PHASE
OF INDUSTRY!**

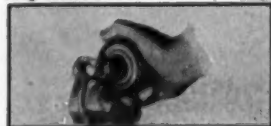
Originally designed and engineered for heavy-duty materials handling...also available in economical Light & Medium capacity models!

Every superiority of these systems results from features originally developed for heavy-duty cable conveyor application by American Cable-Link Engineers.

"Press-Lok" Trolley Brackets with removable-wheel feature... "Adjust-Pitch" adjustable-pitch idler, drive wheels with removable wear-shoes—these are just a few of the exclusive features of American Cable-Link Conveyors which no other system can match.

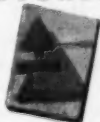
These sound, engineering principles are applied, not only to overhead systems, but also to American Cable-Link floor, apron, and bucket-elevator conveyors. Literature on heavy-duty, medium, and light models available on request.

Simple method of removing trolley wheels from bracket without dismantling bracket.



DISTRIBUTORS!

Protected territories
still available to
qualified firms. Write
immediately for
complete details.



HERE ARE PATENTED FEAT-
URES OF 2-PIECE "PRESS-
LOK" TROLLEY ASSEMBLY.

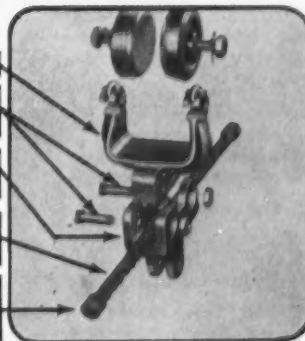
Upper section of "Press-Lok" Trolley Bracket.

Hardened, tapered pins facilitate fast, simple assembly and dismantling of "Press-Lok" Trolley Bracket.

Lower section of Trolley Bracket showing "Cable-Links" in cavity to be retained at fixed accurate interval.

"Cable-Link" durable cable of improved plow-steel, made in uniform lengths, used as linkage between trolleys.

Formed ends of "Cable-Link" engineered to provide a SAFETY FACTOR FIVE TIMES GREATER THAN THE MAXIMUM RECOMMENDED OPERATING LOAD!



AMERICAN CABLE-LINK COMPANY

Dept. "A" — 13446 FENKELL • DETROIT 27, MICHIGAN

Sole Canadian Representatives
INTERNATIONAL EQUIPMENT COMPANY, LTD., MONTREAL, QUE.
BRANCHES—TORONTO, VANCOUVER, EDMONTON

Circle No. 135 on Reader Service Card for more information

What's new

in useful FREE literature

These publications, written by experts, are FREE. Indicate your choice on the self-mailing Readers Service Card.

Hopper Box System Reduces Handling Area:

The Powell Pressed Steel Company presents a colorful 6-page broadside introducing a new system for handling small parts in high production operations. Cold-formed all-steel hoppers, bottom chumps and roll overs are shown in a single-station proction system designed to reduce handling areas for any job requirement.

Circle 196 on Reader Service Card

Interchangeable Conveyors:

Sage Equipment Company's pamphlet explains how to use interchangeable conveyors for six individual operations. Simply hook standardized units together, for continuous flow of materials, to cut handling costs and gain plant efficiency.

Circle 197 on Reader Service Card

New Truck Pump:

Blackmer Pump Company describes a new rotary truck pump said to be ideally applied to handling petroleum products. Other features, construction details, specifications, a guide to proper application and truck mounting data are included.

Circle 198 on Reader Service Card

All-Steel Hand Trucks:

All-steel hand trucks, platform trucks and shelf trucks, all with rubber tired wheels are illustrated, described and priced in a mailer offered by Laughlin Manufacturing Company.

Circle 199 on Reader Service Card

New Method Prevents Rust:

A 12-page booklet describing the advantages and applications of a rust-preventive packaging method known as Angier "VPI" wrap is now available from the Angier Corporation.

Circle 200 on Reader Service Card

Hand Lift Truck Check Chart:

Market Forge Company offers a new check chart of 34 features to look for in selecting hand lift and pallet trucks. This selection guide describes and illustrates design and construction features essential to safety, performance and maintenance on a check sheet providing space for evaluation and comparison of hand-lift equipment.

Circle 201 on Reader Service Card

Tubular Steel Stacking Pallets:

The C. E. Robinson Company presents a new 12-page catalog illustrating the Cerco tubular steel stacking pallets in standard sizes and designs. Specifications include pallet racks of standard box and coil type, as well as special types for stacking motors, rims, transmissions and axles.

Circle 202 on Reader Service Card

New Lug Handling Film:

A new 10-minute color movie showing the Hyster Straddle Truck handling wooden lugs is now available from the Hyster Company. The 16mm film shows the advantages of straddle truck use in orchard, packing and cold storage operations.

Circle 203 on Reader Service Card

Portable Conveyor:

May-Fran Little Hustler in both portable, Series A, and semi-stationary, Series S, models are described and illustrated in a catalog sheet offered by May-Fran Engineering, Inc. Sizes and specifications of both models are included.

Circle 204 on Reader Service Card

Air, Electric Bulk Hoists:

The Ingersoll-Rand Company, in an attractive new 44-page catalog, describes air and electric hoists for handling bulk

materials. Heavy duty industrial and mining applications are illustrated along with remote control units, throttle and brake equipment for single, double and triple-drum hoists. Also included is information on material weight and rope pull data, rolling friction allowances.

Circle 205 on Reader Service Card

Compare Gas Power Trucks:

The Yale & Towne Manufacturing Company depicts its gasoline, diesel and LP-Gas industrial lift trucks in capacities from 1 to 1000 pounds in a new 12-page bulletin. Included is a specification chart comparing different models of Yale gas-powered equipment, cutaway photographs featuring shockless steering, hydraulic brakes, hypoid gears and fluid couplings, as well as attachments handling a variety of different loads.

Circle 206 on Reader Service Card

Select the Right Hose:

Quaker Rubber Corporation, Division of H. K. Porter Company offers a new 58-page industrial rubber products catalog, illustrating belting, industrial hose, packing and moulded rubber goods. In addition to technical product data, the catalog includes information on conveyor belting and hose constructions, hose application, selection, longer life and couplings.

Circle 207 on Reader Service Card

Uses Pallets to Advantage:

Increased handling efficiency by use of unit pallet loads in a new Chicago bakery is featured in an article in the current issue of Storage Battery Power, published by the Edison Storage Battery Division of Thomas A. Edison, Inc. Other case histories describe pallet handling in a large Virginia apple storage warehouse and the installation of the first Edison MC storage battery in a high-tiering truck handling cased beer in a Philadelphia brewery.

Circle 208 on Reader Service Card

New Fork Truck for 6-Foot Aisles:

Lewis-Shepard Products, Inc., offers two new circulars describing their model M high electric straddle type fork truck, in articulated and narrow styles for 6-foot aisle operation. Both styles come in either 2000 or 3000 pounds capacity, and feature a wrap-around reinforced steel compartment designed for operator safety.

Circle 209 on Reader Service Card

Duty-Designed Containers:

A new 24-page brochure illustrating the handling advantages and technical details of the company's welded steel wire mesh containers is now available from the Pittsburgh Steel Products Division of the Pittsburgh Steel Company. Also included in the booklet is information on welded wire pallets and industrial bulkheads, with a number of industrial case history examples of cost reduction.

Circle 210 on Reader Service Card

Compares Wear and Tear of Solid Industrial Tires:

Severe fatigue tests to determine wear resistance of solid lift truck tires are described in a new colorful booklet now available from the Monarch Rubber Company. These tests, over a period of years, determine comparative strength and resistance of standard lift truck tires to cutting, chipping and wear. Illustrations show tires before and after specific tests.

Circle 211 on Reader Service Card

V-12 Engines 225 to 675 HP:

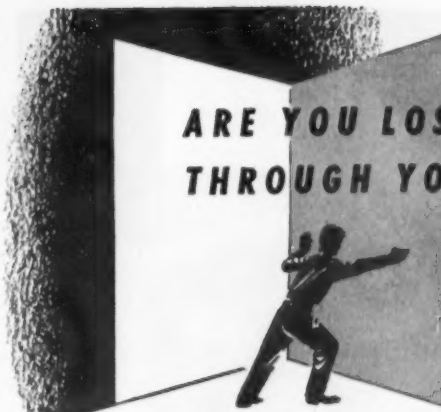
A colorful new 8-page bulletin describing 225 to 675 hp LeRoi L3460 and L4000 engines is now available from the LeRoi Division of the Westinghouse Air Brake Company. Cutaway views show design feature such as integral V-12 block, counter-balanced crankshaft and hydraulic valve lifters. Charts showing space savings and hp ratings at various rpms of this powerful natural gas-butane-gasoline engine are also included. Basic specifications and industrial applications are shown.

Circle 212 on Reader Service Card

Adjustable-Speed Drives:

An attractive 16-page bulletin illustrating Eaton Adjusto-Speed drives, five types of dynamometers, and air- and liquid-cooled couplings and brakes is available from the Eaton Manufacturing Company. Typical applications, technical data and basic characteristics also are included.

Circle 213 on Reader Service Card



ARE YOU LOSING PROFITS THROUGH YOUR DOORS?

YOU ARE IF MANPOWER OPENS THEM

Figure the costly materials' handling time wasted daily in your plant through busy manually-operated doors: To get through such a door, a worker must stop and leave his truck . . . open the door . . . return to the materials . . . then pass through the door. Finally, to save conditioned air, he must return to close the door before going on.

Add heat waste, door and equipment damage and decreased worker morale to those unproductive man-hours. They total up to a staggering profit loss!

STANLEY

Magic Door CONTROLS SPEED UP TRAFFIC and LOWER COSTS



MAGIC EYE

(Photo-electric). Actu-ates door when beam is broken.



PUSH PLATES

Wall-mounted push or kick plates. Adaptable to many industrial locations.



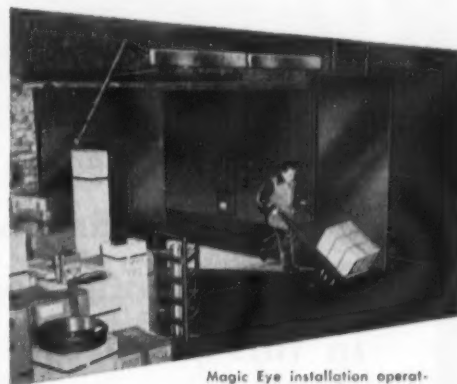
PULL CORD

Door is operated only with pull of overhead hand cord.



MAGIC CARPET

For pedestrian traffic only. Ideal for office use.



Magic Eye installation operating combination of a swinging and a sliding door at White Motor Co. Plant, Cleveland, Ohio.

Here, you can see how WHITE MOTOR CO., Cleveland, Ohio, licked the problem in one of their departments of simultaneously opening a combination swinging and sliding door, easily and economically. By automatically opening and closing office, plant, or warehouse doors with Stanley Magic Door Controls, you too can save time, labor, and money.

One of the controls illustrated could be custom-engineered to ANY door or combination of doors that swing, slide or fold, in your plant. Made for years of dependable service . . . designed for minimum maintenance . . . Stanley Magic Door Controls are the practical answer to your materials' handling problems.

Send the coupon for the name of the Stanley Field Technician nearest you. He will be glad to show you how automatic Stanley Magic Door Controls will increase your productive man-hours . . . boost profits!



REPRESENTATIVES
IN PRINCIPAL
CITIES

MAGIC DOOR DIVISION, The Stanley Works
3012 Lake Street, New Britain, Conn.

- () Please send full information on Stanley Magic Door Controls.
- () Have Field Technician call.

Company Name _____

My Name _____ Title _____

Company Address _____

City _____ Zone _____ State _____

STANLEY TOOLS • STANLEY HARDWARE • STANLEY ELECTRIC TOOLS • STANLEY STEEL STRAPPING • STANLEY STEEL

Circle No. 251 on Reader Service Card for more information



**There's an easy way
to raise profits for you
in this picture!**

**Rapistan "Packaged" Power Conveyors
cost Less . . . do more jobs**

Rapistan power belt conveyors are standard units. They are interchangeable. Put them to work in different jobs anytime. They see more use, don't stand idle in a back room. When necessary, you can lengthen or shorten a Rapistan belt conveyor to suit new needs. That's making the most of an investment. Rapistan belt conveyors are safe investments, too, with pop-out rollers, guard rails, chain guards, gap plates and other features for worker protection. Put Rapistan belt conveyor together with Rapistan gravity conveyor, and you have a "controlled flow" system. That's economy!

ASK ABOUT BUILDING YOUR OWN SYSTEM with Rapistan "packaged" conveyor units. We'll send you literature showing how conveyors pay for themselves in profit increases and improved operations.

FREE ENGINEERING SERVICE
is as close as your phone.
Rapistan Sales-Service Agencies
are located in major cities,
ready to serve you. Distributors
in most foreign countries.

Rapistan®

POWER CONVEYOR
The RAPIDS-STANDARD CO., Inc.
454 Rapistan Bldg. Grand Rapids 2, Mich.

Circle No. 127 on Reader Service Card for more information



New Magnesium Hand Truck Models:

Light weight, all-bolted construction and a wide variety of accessories and models of Magcoa magnesium hand trucks feature a new bulletin available from Magnesium Company of America. 12 models as well as six frame styles, three nose plate sizes and five wheel types are illustrated.

Circle 214 on Reader Service Card

Explains Two-Way Radio for Industry:

Showing what two-way radio is, how it works and what it does, as well as material handling applications, are featured in a new 12-page booklet now available from the Radio Corporation of America. The booklet also describes FCC controls, and procuring, planning operating and servicing a two-way radio system.

Circle 215 on Reader Service Card

208 HP Tractor Cuts Work Time:

LeTourneau-Westinghouse Company offers a new 28-page folder in color, describing a 208 hp tractor. Features include a wide range of speeds, anti-friction bearings, all-welded steel case, electric motors at action points for positive control and interchangeable tools ranging from bulldozer to snow plow.

Circle 216 on Reader Service Card

Cuts Exhaust Fumes:

Claiming to end exhaust fumes from gasoline, diesel or LP-Gas-powered equipment by installation of OCM catalytic exhaust, a 4-page bulletin offered by Oxy-Catalyst, Inc., describes its advantages and installation.

Circle 217 on Reader Service Card

Hydraulic Lifts:

Globe Hoist Company presents a 48-page book with 21 case histories describing the advantages and applications of Globe Oilifts in as many industries. Each installation illustrates the solution of a specific handling problem.

Circle 218 on Reader Service Card

"New Look" Corrugated Boxes:

Hinde & Dauch Company offers a 4-page folder showing boxes made of Corabrite, a new lighter-colored corrugated board with a smooth finish and uniform color and texture. The Hinde & Dauch branch nearest you is listed on the back.

Circle 219 on Reader Service Card

Plant Communication for Control:

TelAutograph Corporation offers a new 8-color booklet on how to use plant communications to control manufacturing operations, stressing the control of handling work in process. Six basic problems are analyzed and diagrammed. Solutions for these communication problems include an explanation of the TelAutograph Telescriber Systems.

Circle 220 on Reader Service Card

Collapsible Containers:

Container Products Division of U. S. Rubber Company presents a 16-page bulletin describing the advantages and applications of the new 70-cubic foot U. S. Sealed Bin collapsible container. Built of two-ply tire-cord-type fabric, it is inflated for filling shipping and storage and deflated, collapsed and folded to 15% of size for return and re-use. It is claimed to be non-corrosive, verminproof, leakproof and moistureproof, and low in cost.

Circle 221 on Reader Service Card

Dump Bodies with Hydraulic Hoists:

The Gallion Allsteel Body Company offers a new 4-page catalog describing the Gallion Allsteel model 12N-7 heavy duty dump bodies in 10 to 13 foot lengths, with matching hydraulic hoists in three models from 15 to 25 ton capacities. Construction features, mechanical details and specifications are included.

Circle 222 on Reader Service Card

Diesel Crawler Tractor:

Features of the Allis-Chalmers HD-9 diesel-powered crawler tractor are shown in a cutaway view highlighting a new 30-page catalog now available from the Allis-Chalmers Manufacturing Company. On-the-job photographs illustrate the tractor's versatility and performance, and allied equipment and special accessories matched to the HD-9 for maximum operating efficiency.

Circle 223 on Reader Service Card

Eliminates Pre-Rolling Mandrel:

Dyken Manufacturing Company introduces a 4-page brochure illustrating a new method of automatically rolling and wrapping pliable materials on its new self-starting rolling machine, which eliminates the need for pre-rolling mandrel or starting bar. Materials, capacities, speeds of rolling, controls and automatic wrapping, measuring and cut-offs are discussed.

Circle 224 on Reader Service Card



**There's a new way
to cut costs for you
in this picture!**

**New Rapistan FLOW RACK
speeds order selection, adds storage space**

Deep-storage FLOW RACK eliminates the need for many aisles in storage areas. This gravity conveyor racking system cuts down costly delays, provides fingertip access to inventory, speeds up order selection and turns "dead" aisle space into useable storage depth. FLOW RACK relieves employees of physical lift-and-lug, increases their per-hour value, and cuts overtime costs. FLOW RACK can be installed in a matter of hours by your own crew, without welding. It can be removed and reinstalled in another location, and can be extended either in depth or width at any time. FLOW RACK is available in standardized units for handling products of any size, weight or type . . . flat cartons, mattresses, bottled goods, small parts, foods and many others!

OUR FREE BOOKLET "FLOW RACK" contains many new money saving, time saving ideas for using FLOW RACK in production, storage, shipping, receiving and inventory operations in many industries. Write today.

Rapistan®
FLOW RACK

The RAPIDS-STANDARD CO., Inc.
454 Rapistan Bldg., Grand Rapids 2, Michigan

**THERE'S A RAPISTAN
SALES-SERVICE AGENCY
near you, with factory-trained
experts ready to serve you
with experienced know-how.
Distributors in most
foreign countries, too.**

Circle No. 128 on Reader Service Card for more information

**There's a time saving
new idea for you
in this picture...**



**New Rapistan
FLOW RACK
lowers production
costs by placing materials
where they are used**

Now you can conveyorize your parts inventory . . . and put it into working areas! And you have more orderly inventory control — with less walking, lugging and trucking. You can pack more inventory into any given space, too, by cutting out unnecessary aisle area.

You do it with Rapistan FLOW RACK, a new conveyor that moves materials by gravity . . . and puts them where they're needed.

New steel FLOW RACK is a low cost surprise, too. It's easily put in without welding and needs no maintenance.

SEE EXACTLY HOW RAPISTAN FLOW RACK CAN ADD more to your profit. A free booklet "FLOW RACK" is full of ideas and facts on how this new system does a better job in production, selection, accumulation, inventory movement and materials handling in all types of industry. Write today.

**Rapistan®
FLOW RACK**

THE RAPIDS-STANDARD CO., Inc.
454 Rapistan Bldg., Grand Rapids 2, Mich.

Circle No. 129 on Reader Service Card for more information

One-Lever Lift Truck:

Illustrating a lift truck with a unique single lever control for shifting, lifting and braking is a folder presented by Colson Corporation. Known as the "Handler", the new model SR-4 is a gasoline powered lift truck of the rider type with hydraulic drive and control, 4000 pound capacity, two speeds forward, two speeds instantaneous reverse, and "dead man" brakes.

Circle 225 on Reader Service Card

Lessens Fork Lift Bounce:

A new hydraulic component which cushions shock and vibration, gives fork lifts a smoother, faster, safer ride is described in a bulletin published by Greer Hydraulics, Inc. Actual field test proved the Greer hydraulic Accumulator an effective shock reliever for material handling equipment. Other benefits claimed include reduced spillage and breakage, improved fork lift performance, less operator fatigue and longer fork truck life.

Circle 226 on Reader Service Card

Food Handling Savings:

How to reduce labor costs, improve sanitation and save space with Cres-Cor food handling equipment is outlined in a catalog offered by Crescent Metal Products, Inc. Complete with specifications, the catalog illustrates aluminum Cres-Cor flexible shelving which is light, durable and rust-free.

Circle 227 on Reader Service Card

Semi-Live Skids:

Five applications and ten types of Towsley semi-live skids are illustrated and described in a 4-page bulletin now offered by Towsley Trucks, Inc. Specifications and prices of each model are included.

Circle 228 on Reader Service Card

Sprayable Plastic Coating:

R. M. Hollingshead Corporation offers a basic manual for spraying Cocoon plastic coatings. The manual reviews the techniques of spraying and their effects on this plastic protective coating.

Circle 229 on Reader Service Card

All-Steel Ramps:

A new catalog-size broadside illustrating its full line of all-steel ramps, pallet stackers, conversion kits and torque hooks is offered by Elizabeth Iron Works, Inc. A formula for determining the span of gap and height differential between car floor and platform is included.

Circle 230 on Reader Service Card

Aluminum Dockboards:

Washington Aluminum Company, Inc., presents a catalog sheet describes extruded Waco-Span aluminum dockboards fabricated in ten sizes and four types. Besides being safe, light, strong and easy to handle, Waco-Span dockboards eliminate the static spark hazard in handling explosive materials.

Circle 231 on Reader Service Card

Shovels Dig Turnpikes:

How more than 200 Lorain shovels and cranes helped construct nearly 1000 miles of turnpikes and thruways in four states is described in the current issue of the Thew Lorain News, published by the Thew Shovel Company and available to you. Use of Lorain cranes and shovels on many other major construction jobs is also featured in the same issue.

Circle 232 on Reader Service Card

Complete Storage System:

Diversified storage systems including pallets, boxes, racks, pallet racks and special pallet hardware are described in a 16-page booklet available from the Paltier Corporation. Many variations and applications of basic units are illustrated.

Circle 233 on Reader Service Card

Engine Hour Meters:

How Hobbs engine hour meters are assembled, inspected and tested for dependable performance in the field, is described in the current issue of Hobbs Hour Meter Talks published by the John W. Hobbs Company, and available to you.

Circle 234 on Reader Service Card

Makes Tape As Used:

Williamson Adhesives, Inc., offers a brochure describing a new machine producing continuous pressure-sensitive tape at the point of use. Many applications are possible by use of a variety of materials, in widths from 3/4 to 3 inches. The compact unit is 18 inches square and 5 feet high.

Circle 235 on Reader Service Card

New Packaging for Glass:

Sus-Rap Vanant Company, Inc., offers a 4-page folder describing Sus-Rap, a new method of packaging glass and other fragile objects which provides horizontal and vertical suspension to float the product. Other advantages claimed for Sus-Rap include reduction of packing time, breakage, damage and costs.

Circle 236 on Reader Service Card

There's a profit saving
new idea for you
in this picture . . .



Rapistan
"Controlled
Flow" Systems
work smoother,
pay profits sooner.

Controlled flow eliminates confusion and costly breakage . . . and gives you more profit. Rapistan alone provides "controlled flow" in gravity and power conveying systems because Rapistan gives you more controls and accessories to keep your line flowing smoothly and without interruption. For the utmost in convenience and utility Rapistan has exclusive accessories for automatic operation — spur curves, flow diverters and limit switches. For worker safety Rapistan has pop-out rollers, hinged plates over belt gaps, chain guards, full length belt conveyor controls bars and capacity features found in no other system.

WRITE FOR FREE catalog and actual field reports which show how RAPISTAN flow systems have solved materials handling problems for your industry . . . just tell us the business you're in.

LOCAL ENGINEERING SERVICE IS YOURS FREE . . .
There's a Rapistan Sales-Service Agency near you,
listed in your phone book. Distributors in most
foreign countries.

Rapistan

CONVEYOR SYSTEMS

The RAPIDS-STANDARD CO., Inc.
454 Rapistan Bldg. • Grand Rapids 2, Michigan

Circle No. 130 on Reader Service Card for more information

Stitched Canvas Belting:

Fifteen types of Imperial inner-locked stitched canvas belting for conveying, elevating and transmission are described and illustrated in a 4-page folder offered by the Imperial Belting Company.

Circle 237 on Reader Service Card

Mass Flow Measurement:

A colorful bulletin describing the use of a Gyro Mass Meter for precision measurement of mass flow of fluids is offered by the Control Engineering Corporation. Operating principles, advantages and applications are discussed.

Circle 238 on Reader Service Card

Easily-Assembled Bulk Bins:

Sturdi-Bilt Bulk Bins with adjustable wooden shelving and steel posts which can be assembled easily without tools or hardware are described in a bulletin presented by Sturdi-Bilt Steel Products, Inc. Specifications and components are fully covered.

Circle 239 on Reader Service Card

Peelable Plastic Packaging:

Eastman Chemical Products, Inc., offers a colorful 12-page booklet introducing Butyrate, a new peelable plastic packaging material. Preservation of parts is accomplished by dipping into

molten plastic, which solidifies on withdrawal. Advantages and applications are fully described.

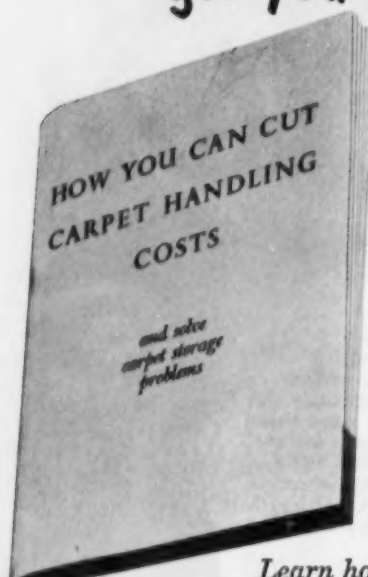
Circle 240 on Reader Service Card

Light-Load Conveyor:

Turning overhead or bench conveyor problems into profit is the subject of a bulletin describing advantages of the MonoFlo conveyor, offered by the M-H Standard Company. Four different industrial applications and technical data are illustrated and described.

Circle 241 on Reader Service Card

Don't let CARPET HANDLING get you down!



Write for
this FREE BOOK!

Learn how you can...

Lower labor costs! Expand capacity! Eliminate cut-order bottlenecks! Profit with present equipment!

Modernize at less cost! Get pushbutton results!

And much more!

SEND FOR YOUR FREE COPY TODAY

THE EASIQUIP COMPANY
1522 N. Indiana Street, Los Angeles 54, Calif.
Please send my free copy of "How You Can Cut Carpet Handling Costs."

INDIVIDUAL

FIRM NAME

STREET ADDRESS

CITY

ZONE

STATE

EASIQUIP
ROLLSTOR SYSTEM

for better handling
and storing
of broadloom carpet

Circle No. 116 on Reader Service Card for more information

"Stack Up" for Profit:

"Stack up" with American tiering racks and cut your handling and warehousing cost is what American Metal Products Company, Storage Rack Division, suggests in its latest literature. The racks are designed to hold products in economical large unit loads, and the weight of the upper units is carried entirely by tubular corner posts.

Circle 242 on Reader Service Card

Compact Crane Controls:

A complete description of the General Electric Company's redesigned and expanded line of a-c crane controls which have less than half as much enclosure depth and improved maintenance and installation features is contained in Bulletin GEA-6112. Special emphasis is given to the application, installation and selection; illustrations include speed-load charts, circuit diagrams and installation photos.

Circle 243 on Reader Service Card

Pneumatic Handling:

The Fuller Company offers a 4-page reprint of a technical article on the pneumatic handling of flour and sugar. Describing how the entire handling operation is controlled from a central panel by one man, the article tells how the pneumatic system reduces handling costs to approximately 5 percent of the total manufacturing costs.

Circle 244 on Reader Service Card

Elevating Table:

Bulletin 957 from Lange-Lift Company is a spec sheet on the company's portable hydraulic elevating table. Says the company, "Never before an elevating table with all these features," and goes on to point out these features.

Circle 245 on Reader Service Card

(Continued on page 162)

FLOW Reports on Handling 'Round the Country

TWO-WAY RADIO ENDS "WALKING AND YELLING"

Nobody has ever dared estimate the amount of walking or shouting done on the open hearth floor of a steel mill in producing one ton of steel. But operating executives of U. S. Steel's new ultra-modern Fairless Works have adopted a new communications system by which men on the hot metal runway and on the pouring floor can talk to overhead crane operators without raising their voices or chasing the rumbling cranes through the one-third-mile-long building.

Delays in use of valuable crane time, and the nervous and vocal strain imposed by old-style "walking and yelling" communication with the crane operators, are practically eliminated with a two-way frequency-modulated (FM) carrier communication system, now operating along both the charging and pouring sides of the nine open hearth furnaces.

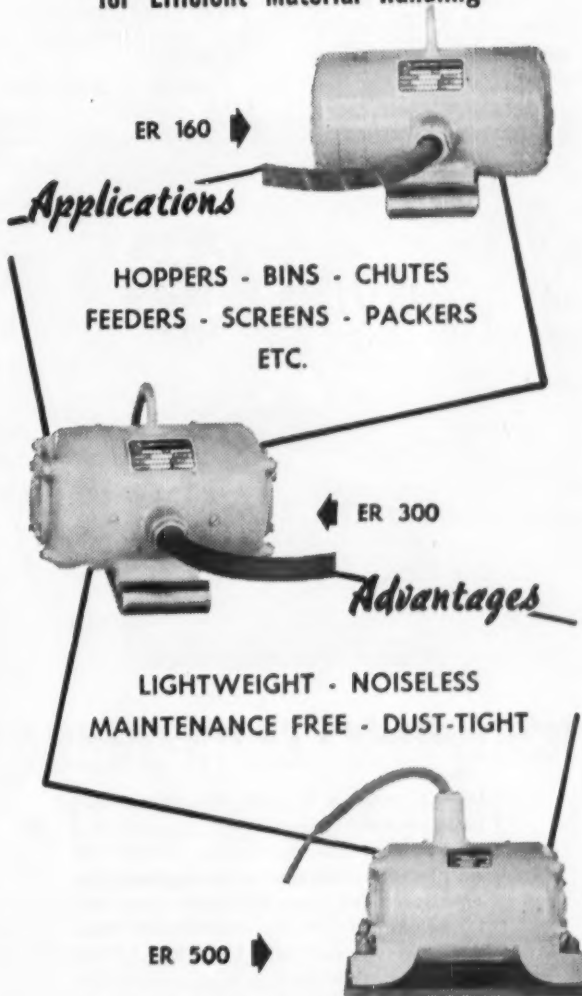
To give instructions to a crane operator, the first helper or other ground-floor personnel need only step to a wall-mounted "Telecrane" station and talk into the microphone. The receiver is always on "stand-by" and he can key the unit for transmitting to communicate with the man on the crane.

Similarly, the unit in the crane cab comprises both transmitting and receiving apparatus—a wall-mounted loudspeaker, and a ceiling-mounted microphone adjusted to the level needed for the crane operator. A foot switch on the floor of the crane cab permits the crane operator to transmit.

Each of three cranes on each side of the open hearth, a total of six cranes, is thus equipped. On the hot metal runway or charging side of the open hearth there are six "Telecrane" base stations and "satellites" or remote stations, located on building columns where they are out of the way yet con-

TOPDOG ELECTRIC VIBRATORS

for Efficient Material Handling



Our free consultant and engineering service is at your disposal to help you solve any of your material handling problems.

Forward us the details of your particular problem and complete recommendations will be furnished to you.

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veniently nearby for open hearth personnel. Similarly, six such stations are located along the pouring side.

Practical range of the system, under normal power line conditions, is one mile. It also can provide clear two-way voice communication on as many as ten channels without "cross-talk" interference.

Each speaker in the Telecrane system at Fairless Works has its own volume control, for adjustment according to surrounding conditions.

* * *

HOIST JOINS CANCER FIGHT

Servicing a giant five-ton Betatron, one of science's newest weapons against cancer, is simplified at New York's famous Memorial Center for Cancer and Allied Diseases by an industrial hoist.

The Betatron, which shoots 24-million electron volt X-rays at deeply seated cancers, is made up of numerous massive parts which maintenance technicians cannot lift out by hand.

Using a three-ton spur geared block mounted on an overhead

rail, two maintenance technicians lift a lead door weighing 275 pounds from the machine. The huge internal magnets and the heavy motors which turn the machine into proper position for treatment or research experiments also can be removed by means of the hoist for periodic maintenance.

* * *

EASY HANDLING OF BULKY BALES

Modern handling methods involving the use of two fork trucks have enabled the Copolymer Corporation, Baton Rouge, Louisiana, to reduce by half the number of men formerly required to transport "bales" of synthetic rubber from the wrapping room to highway trucks or boxcars.

The bales weigh 75 pounds each and are fed into a packaging machine which wraps them in transparent film. They are then packed in corrugated boxes, 33 to the carton, and weigh a total of 2475 pounds. Production averages a carton every 12 to 15 minutes.

The loads are not palletized, and one of the fork trucks is equipped with a special unloading device.

From the wrapping room the cartons are taken to storage, where another fork truck, this one equipped with special off-center forks, picks them up and loads them into carriers.

* * *

HOW TO DOUBLE WAREHOUSE CAPACITY

A large midwestern grocery chain recently doubled its warehouse capacity by installing "do it yourself" multiple-tier racks. By reducing the number of aisles through vertical storage, the chain effected great savings in time and effort required to load, unload, select and transport merchandise within the building.

Racks can be changed in capacity or shelving depth at will, even dismantled and rebuilt to entirely different requirements, making for complete versatility.

* * *



STACKING BOX

SKID BOX

FOLDING BOX

BOX TRUCK

Extra hands . . . no extra cost

Lewis Containers provide the extra hands to move America's materials . . . fast . . . safe . . . sure. Constructed of resilient elm slats locked together with heavy gauge wire on a dovetailed frame of durable hardwood . . . reinforced with steel corner irons. These containers are built to last, and last . . . and last. Five basic styles with many adaptations to meet your particular plant problem.

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LEWIS

INDUSTRIAL CONTAINERS

Representatives near you to provide helpful service

G. B. LEWIS CO.

6023 MONTGOMERY ST., WATERTOWN, WISCONSIN

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EASY HANDLING OF LARGE SHEETS

The problem of moving hard-to-handle single 15-foot flat steel sheets from the seam welder to the roll former was solved by a large eastern manufacturer of pipe through the installation of gravity wheel conveyor units in an assembly consisting of nine rows of two units placed end to end. The units are pitched slightly downward, are spaced about two feet apart, and are mounted on center supports made by the pipe manufacturer's shop maintenance staff.

The steel sheets move smoothly by gravity from one operation to the other, semi-automatically. Costly and awkward moving by hand has been eliminated and an in-process storage bank as well as a live feed-in table to the roll former is provided.

* * *

WOVEN WIRE SLINGS CUT CONSTRUCTION COSTS

Problems often arise in the handling of pre-cast concrete building shapes. This includes joists, girders, I-beams, concrete planks and other large structural shapes used in the construction industry. When hooks are not cast into the assembly, it is necessary for the manufacturer to find a means of lifting such units. One of the major problems in the selection of a proper sling is the extremely abrasive condition of the castings.

A spiral wire loop construction sling has solved the problem for Arnold Stone Company of Greensboro, North Carolina. The sling consists of woven sections of spiral wire loops which are joined across the body of the sling to provide a broad, flat bearing surface for the load. Because of the spiral wire loop construction, the sling bends along its width as well as along its length. Thus, it grips tightly around sharp edges, but will not crush edges or mar surfaces.

The company is using woven wire slings for handling such items as joists, column struts and large lintels. When the concrete in the molds for these pieces has hardened, the form is shaken out of the mold. The woven wire slings are used to move the completed piece

from the shake-out station to the point where the forms are filled and rubbed down. From this point, other slings are used to move the forms out of the plant and into storage areas.

Since the woven wire sling is of all-metal construction, it is not cut or otherwise damaged by the sharp edges of the concrete shape, and since the sling flexes along its length and across its width, it conforms readily to any angle of configuration of the piece being han-

dled. Also, as this type sling will not kink or tangle, time is saved in rigging and the sling is easy to use. The company estimates total repair savings of \$600 and labor savings of \$500 over a period of a year.

Typical applications for woven wire slings in other industries include handling heat exchanger tube bundles, pipe and bar stock in steel warehouses, electric motor armatures in repair shops, cargoes for dock-side loading, pipe lengths in



“AMF LOWERATORS speed production with less physical effort...”

says R. E. Randall, Asst. Dir. of Public Relations, Burroughs Adding Machine Co., Detroit, Mich.

“Because AMF Lowerator Self-Leveling Work Positioners always pre-position materials at a constant level, the operator need never bend or move from his work position. This speeds production, with far less physical effort.

“What’s more, AMF Lowerators give us balanced production from seven machines

despite wide variances in their machining times. We’ve found, too, that our handling costs are reduced and less floor space is needed.”

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pipeline construction, and storage tanks in fabrication or installation.

• • •

TRICKY CHAIN LUBE PROBLEM SOLVED

Maintaining cleanliness is an important factor in the operation of every food plant, but in the largest pie bakery in the world located under one roof, it is a fetish.

Table Talk Pastry Company, Inc., Worcester, Massachusetts, a

mammoth facility capable of turning out as many as two million pies in an average month, boasts one of the most modern pie-baking plants in existence. The exterior walls are studded with vast expanses of glass blocks to admit sunlight and the interiors of the work rooms are finished in gleaming white tile. The mixing and baking equipment is of stainless steel wherever possible to facilitate the maintenance of thorough cleanliness.

It was into this glistening atmo-

sphere that the pie-baking ovens had been pouring acrid smoke once every week to the consternation of the corps of maintenance and cleaning men and management alike. The maintenance department was faced with the tricky problem of oven chain lubrication. The best answer that could be found was a kerosene and graphite mixture which provided an inefficient lubrication job at best, since conveyor kinking, which was the root of the vexing problem, continually recurred. Aside from the ineffectiveness as a lubricant, the kerosene in the mixture flashed off as soon as the chain was exposed to the 450 to 500 degree Fahrenheit operating temperature range of the pie-baking ovens. The result was a heavy smoke fog which permeated the work room for almost half a day each week . . . when the ovens were fired after being lubricated. This smoke fog literally defied the efforts of the exhaust fans with which the plant is amply supplied.

Slat Conveyor Used

The tremendous 60-foot long, oil-fired ovens in which the pies are baked are fed at the "mouth" end by a slat-type conveyor. The conveyor, which is chain driven, is wide enough to carry 12 full-size pies side by side, and about 600 in all, along its length. Each slat of the conveyor is about six inches wide.

The slats are anchored to the links of the conveyor chain and move into the oven at an approximate rate of four feet per minute. This speed varies, depending upon the necessary baking time for the different kinds of pies.

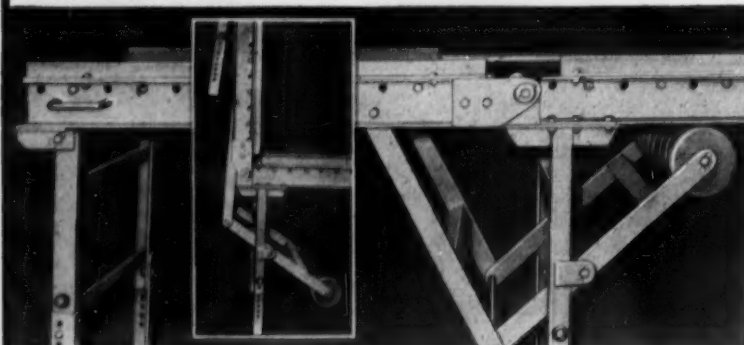
The chain is driven by a two hp motor through a gear train, the force being applied to the chain through a sprocket gear. In order to avoid sag in the conveyor, the chain is supported by deeply case hardened open hearth steel rollers ground in bore which ride on parallel tracks along the sides of the oven throughout its entire length. These rollers rotate on ground and nitrided nitralloy bushings.

Table Talk Pastry Company's problem involved the proper lubrication of the alloy steel hardened and ground pins which joined the links of the chain. The primary

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NEW A-F HINGED SECTION

greatly increases efficiency in frequently opened roller conveyors



Newly designed, more compact counterweight and arms are wholly beneath the conveyor. Some of the advantages include . . .

- INCREASED PRODUCTIVE FLOOR SPACE
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purpose of the effective lubrication of the pins, aside from wear due to friction, is the elimination of kinking in the slate of the conveyor.

This kinking is the result of the refusal of the chain links or side plates to assume a flat shape after passing around either the drive gear at one end of the oven or the idler gear at the other. The comparatively short axis of each of these gears forced each pair of links to assume a tent-like shape since they are anchored to the chain links.

Uneven loading of the conveyor to avoid use of the kinked areas slowed up the production of baked pies and wasted valuable baking space.

Lubrication of the oven chains is completed once a week. When the ovens were fired on the day following the lubrication, the kerosene in the lubricating mixture flashed off as soon as the chains were exposed to the oven's operating temperatures. This was the source of the aggravating smoke problem.

The company needed to find a lubricant which would effectively eliminate kinking of the conveyor and yet not pour billows of smoke into the room. The chain manufacturer was consulted. They recommended a lubricant which is a dispersion of near-colloidal particles of molybdenum-disulfide powder suspended in a polyalkylene glycol vehicle. It travels into the innermost recesses of the chain where the wear is most prevalent and dissipates slowly and without smoke under heat, giving a smooth tenacious film which remains bonded to the pins, bushings and rollers.

When the new lubricant was applied to the oven chains the smoke problem was completely eliminated and conveyor kinking disappeared.

• • •

FORK TRUCK ECONOMICAL IN SMALL PLANT, TOO

Powered industrial truck handling in small plants has been proved economical by more and more companies. Once thought of as the exclusive property of larger firms, inherent benefits gained through faster handling with less

physical effort and at greatly reduced costs are now proudly boasted of by even the smallest companies.

Typical of these is the Sandusky Bay Pipe and Supply Company, Sandusky, Ohio. Operating in a warehouse measuring only 60 x 60 feet, the company found that existing manual methods were proving entirely unsatisfactory.

The plumbing supply warehouse handles more than 50 different products which are contained in boxes, barrels, bags and crates.

Mostly classified as semi-heavy loads, the goods handled weigh between 200 and 300 pounds.

The purchase of a 2000-pound fork truck solved the company's handling problems. Serving as a mobile elevator, the truck utilizes its capacity by stacking to a balcony nine feet above the floor. Small units are palletized to avoid cluttering. Excessive rehandling has been eliminated, accessibility improved, and the flow of material synchronized.

• • •

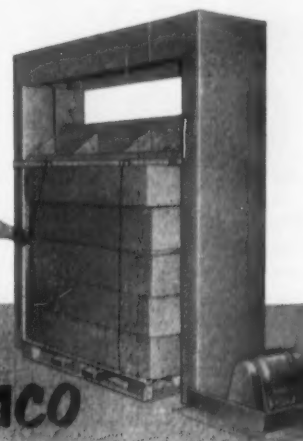
The "PALLET PACKER"

Completely eliminates need of a tensioning tool and excessive manual effort. Automatic platen release allows clipped bands to pull taut, keeps loads tightly compressed.

**A PRESS
OR BALER
FOR
EVERY
NEED**



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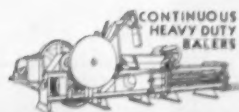


Make every palletized load a pay load with a completely modern, clean line AMBACO press. Fully adjustable push button controls can be set for floor level operation, or raised to conveyor height. All working parts are completely enclosed for maximum safety and efficiency. Handles a variety of materials, with every load uniformly packed and held at proper tension.

Write today for complete information on how the products you process can be handled even more efficiently by an AMBACO "Pallet Packer."



DOUBLE DOOR
DOWN STROKE
BALERS • • •



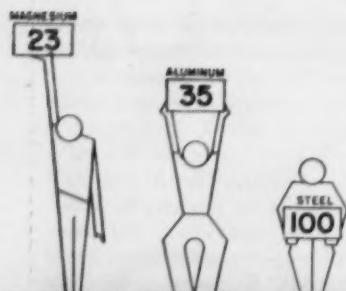
CONTINUOUS
HEAVY DUTY
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SPECIAL PURPOSE
PRESSES AND
BALERS • • •

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Cut the Power Costs BY SHARP REDUCTIONS IN DEAD WEIGHT

Where weight reduction means cost reduction in terms of power or of human effort—USE MAGNESIUM.

Magnesium is the lightest of all commercial metals. Aluminum is 50% heavier. Weight-reducing conversions from heavier metals to Magnesium are popular—and profitable.

Magnesium handles well. It is easily riveted, welded, sawed, drilled.

B&P's practical suggestions are yours for the asking, without obligation. Write or phone B&P's Sales Engineering Department about how you might use Magnesium plate and sheet—also tread plate.



This new folder gives facts—and figures . . . and suggests weight-saving applications. Write us to mail you one.

LIGHTNESS



...PLUS

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Pioneer Magnesium Fabricators

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GOOD APPLE STORAGE MEANS TASTIER PIES

In Winchester, Virginia, near the center of the apple-growing area of the Shenandoah Valley, Winchester Cold Storage Company operates the largest apple storage in the world. Here, the choicest part of the crop, destined for distribution as fresh fruit is brought to storage during the autumn months and then is withdrawn to meet market demands until the following year's crop is harvested.

The company's warehouses comprise a total of 19 rooms, each with a floor area of 120 by 200 feet and a ceiling height of 10 feet, and having a total storage capacity of one-and-a-half million bushels. The service provided by the company is to hold the apples under continuously controlled conditions of temperature and humidity best suited to keep them in perfect condition until they are withdrawn.

For this purpose, a refrigerating plant is maintained which employs the calcium-chloride brine circulating system and in conjunction with admission of no outside air, except

HANDLE IT FASTER!
Eliminate Non-Productive Maneuvering
with a
SWING-SHIFT UNIT
HYDRAULIC FORK CONTROL
ADDED TO YOUR LIFT TRUCK

SWING & SHIFT
so that
SWING-SHIFT

- Speeds carloading by reducing truck maneuvering
- Reduces aisle width 19% to increase storage capacity.
- SWINGS and SHIFTS loads quickly into exact alignment without moving truck.
- SWINGS and SHIFTS to Turn load ahead of truck around corners.
- Units Available for Hyster, Gerlinger, Canadian Mobile, other makes

See Your Lift Truck Dealer or Write
SWING-SHIFT MFG. CO.
RULBERT
LONGVIEW, WASHINGTON

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**TO PEOPLE
WHOSE
PUSHERS ARE
PUSHING
BIG HEAVY CLUNKERS:**



The more dead weight they push . . . the less of your merchandise gets moved!

You'll get more, faster, safer pushing from your pushers the day you replace "snail's-pace" steel and wood pushcarts with B&P's light, modern

**MINIMAX
Pusharounds**
Made of the lightest weight
structural metal
MAGNESIUM

Shelf
Truck

Merchandise
Marking
Truck

Enclosed
Merchandise
Transfer
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Write or phone B&P today about saving your Pushmoney with Pusharounds. Tell us about your uses. We'll adapt our flexible Standard Models to your needs . . . or build what you want . . . PUSH-AROUNDS PAY THEIR WAY . . . PRONTO!

BROOKS & PERKINS, Inc.

Pioneer Magnesium Fabricators
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FLOW

when doors must be opened during receiving and shipping, results in a temperature averaging 31 degrees Fahrenheit and a relative humidity averaging 85 to 90 percent.

In order to accommodate both field crates and boxes, a pallet 36 by 45 inches was adopted. This was predicated upon a pallet pattern consisting of a total of 24 crates or boxes per pallet load piled in four tiers of six each.

Pallet loads are made up on the incoming trucks and trailers. As the unloading advances, the pallets are first placed on short lengths of inverted roller conveyors which serve as dollies to facilitate pushing the loads toward the tail-gates. There a walkie fork truck picks up the load and lowers it upon a floor truck. An elevator takes the load to the point of storage where another walkie fork truck stores it. This procedure permits maximum utilization of the electric trucks and avoids overloading of elevators.

SPEEDY LUMBER DELIVERY

Emphasis on efficient material handling techniques and use of a straddle carrier to make direct-to-job-site deliveries are two ways in which a small Ohio building supply dealer meets and beats competition from larger dealers.

At the yard of Geauga Lumber and Milwork Company in Chardon, Ohio, lumber is unloaded and stacked in unit loads, and is tiered in storage by a 6000-pound capacity fork truck. Each unit is separated by four-by-four's to allow insertion of truck forks. When delivery is to be made, units are dewatered and set on wooden or steel bolsters. A 20,000-pound capacity straddle carrier picks up the order and transports it directly to the job site. The load is set down on two pieces of scrap lumber which are slightly higher than the bolster; thus the bolster can be removed and returned to the yard for re-use.

Gegauga's concrete block plant is two miles from the lumber yard. When an order is received blocks are immediately fork-trucked from storage to a bolster while the carrier is driving over from the lumber yard. Thus no time is lost wait-

ing for order-filling. Five cubes, or 450 blocks, are handled at one time by the carrier.

Use of the carrier not only makes prompt delivery possible but also eliminates the time and cost of unloading at the job site.

* * *

GAS FUMES ELIMINATED

When Simonds Abrasive Company, Philadelphia, Pennsylvania, modernized the storage facilities in

their abrasive grain crushing department gasoline fork trucks were favored but were almost ruled out due to the problem of carbon monoxide accumulating in the indoor working area.

The answer was found in the use of catalytic exhausts on the trucks. Used to replace regular mufflers, the exhausts oxidize more than 95 percent of the carbon monoxide and hydrocarbons in the truck exhaust, turning them into harmless

PULSATING PANELS
eliminate flow stoppage in bins!

If you have material hang-up problems in bins, **PneuBin** will save you money!

PneuBin will solve your flow stoppage problems and reduce your operating expense. The PneuBin unit consists of steel-backed, neoprene, pulsating panels mounted on the inside wall of your present bins and air controls to regulate the panels' action. By the pneumatic inflation and deflation of the PneuBin panels, the bin contents are positively displaced to insure free flow. After the panels have deflated, the air control unit

(operating off the regular plant air supply) starts another cycle of inflation and deflation. The process continues *automatically* at whatever frequency is set on the air controller (this frequency is adjustable).

PneuBin decreases plant operating costs by reducing maintenance, insures constant material flow to production lines and greatly increases personnel efficiency through its quiet operation.

Send for "Flow Stoppage Report" and FREE literature. PneuBin engineers will gladly make recommendations with no obligation on your part.

PneuBin

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GEROTOR MAY CORPORATION
1523 Maryland Ave., Baltimore 3, Maryland

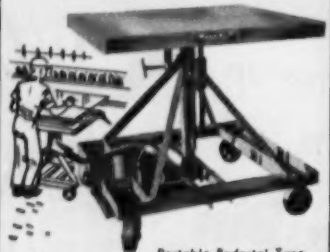
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take the back-breaking
LIFT
out of the Heavy Jobs...
WITH

Weld-Bilt HYDRAULIC LIFT TABLES



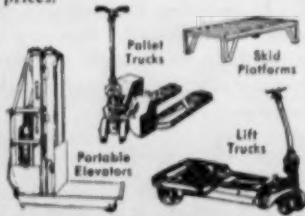
Heavy Duty Table with Electric or Manual Control



Portable Pedestal Type for loads to 2000 lbs.

You don't need "muscle-men" for handling heavy dies, sheet steel, or big machined parts, when you have new WELD-BILT Hydraulic Tables on the job. Just adjust the Table to loading height, slide parts on easily, without tugging or lifting. Then just move to press or machine position, raise or lower to working height—fast, easily.

Heavy duty WELD-BILT Hydraulic Lift Tables, with foot pedal and push button, or foot pump control, handle loads up to 10 tons. Portable Pedestal type Tables handle loads up to 2000 lbs. Write for latest bulletin and prices.



WEST BEND EQUIPMENT CORPORATION

Materials Handling Engineers

336 Water Street, West Bend, Wis.

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156

carbon dioxide and water vapor. This in turn safeguards the health of workmen exposed to the exhaust gases.

Before the modernization program, kegs of abrasives in the Simonds plant had been carried on platforms from the crushing department to the storage room. The kegs were stored by rolling off the platforms and piling in rows eight kegs long and one keg high. This not only wasted valuable space in the storage area but, since the heavy kegs were frequently rehandled as many as five times, time and labor were also wasted.

By changing to palletized loads with fork trucks, the company was able to save more than 50 percent in time and labor and acquired better than two-thirds more storage capacity in the same floor space. Despite continuous use of the trucks, there have been no complaints from exhaust fumes, even in the winter months when windows are closed.

...

Farquhar

power-belt and gravity
Package Handling
CONVEYORS



BEST FOR YOU

They're best for you because they maintain high records of quality, performance and customer satisfaction. Get the facts about Farquhar Conveyors. Write for Bulletin No. 400 today!

OLIVER

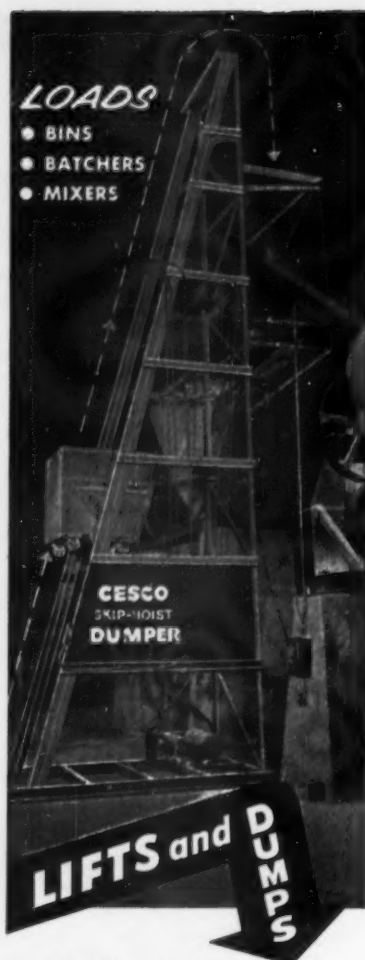


THE OLIVER CORPORATION
A. B. FARQUHAR DIVISION
Conveyor Dept. F-06, York, Pa.

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LOADS

- BINS
- BATCHERS
- MIXERS



LIFTS and DUMPS

**BAGS, BULK,
BARRELS, BOXES
MECHANICALLY!**

You can save time and money with increased safety by installing a CESCO Skip-Hoist Dumper. Lifts, upends and dumps 100 loads per hour with a lifting capacity range from 100 to 1500 lbs. Single and multi-purpose portable models in standard heights from 6 to 10 ft. Stationary models to 20 ft. Easy, safe operation from push button controls speeds up material handling and eliminates accidents.

Write for complete catalog...

ESSEX CONVEYORS, INC.

165 Franklin Avenue, Nutley 10, N. J.

COLSON EQUIPMENT & SUPPLY CO.

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CESCO DUMPERS

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FLOW

CESCO'S TOTE-SHOP BOXES

DO YOUR ROUGH/TOUGH JOB
EFFICIENTLY • EASILY
ECONOMICALLY

on Conveyors • Pallets
Hand Trucks • Skid Platforms
or what have you
RUGGED CONSTRUCTION • PRIME MATERIALS



Model #WB (Wood Bottom)

Stock sizes will accommodate loads up to 200 lbs., possibly greater, depending upon material packed and handling method.

MODEL WB

STANDARD SIZES AVAILABLE FROM STOCK
(Prices net - F.O.B. Northampton, Mass.)

Lots of	WB-1	WB-2	WB-3
2000	\$1.96	\$2.14	\$2.28
1000	1.99	2.17	2.31
500	2.02	2.20	2.34
250	2.07	2.25	2.39
100 Min.	2.12	2.30	2.44

Model	Size	Length	Width	Depth	Weight
WB-1	I. D.	14 1/2"	11 1/2"	9"	11 1/4 lbs.
WB-2	I. D.	18"	11 1/2"	9"	13 lbs.
WB-3	I. D.	20"	11 1/2"	9"	14 lbs.



Solve your Storage and Handling Problems with our Tote Boxes, Trays and Pallets. Write today for quotations on special sizes. Special Marking Facilities, for identification purposes, are available in various colors and numbers. Please submit detailed specifications.

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Factory, NORTHAMPTON, MASS.

General Offices:
Dept. (F) 475 Fifth Ave., New York 17, N.Y.

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FEBRUARY, 1955

SALES FIELD . . .

(Continued from page 62)

Director of export sales for the materials handling division of The Yale & Towne Manufacturing Company is Clyde R. Dean. A graduate of Oregon State College, Dean's background includes many years of export activities in the industrial truck field.

Gar Wood Industries has appointed Don L. Herring district manager for Tractor Equipment Sales. His territory will include the states of Florida, Georgia, Alabama, North and South Carolina and Tennessee, with headquarters in Atlanta, Georgia.

Manager of the Pacific Northwest district for Leschen Wire Rope Division, H. K. Porter

Look for
this mark
and the



RAZORBACK BRAND

TWO guarantees: The Razorback trademark plus the NWPMA mark (National Wood Pallet Manufacturers Association). When you buy RAZORBACK Pallets, you get QUALITY pallets on which you can DEPEND for longer, more satisfactory service. Write for prices.

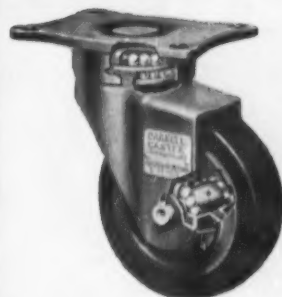
Arkansas Pallet Co.

P. O. Box 794-A Phone 6474
PINE BLUFF, ARKANSAS



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PERFORM MORE
EFFICIENTLY AT
LOWER COST AND
LAST LONGER!



DARNELL CASTERS & WHEELS

RUBBER TREADS . . . a wide choice of treads suited to all types of floors, including Darnelloprene oil, water and chemical-resistant treads, make Darnell Casters and Wheels highly adapted to rough usage.

RUST-PROOFED . . . by the Udylita process. Darnell Casters give longer, care-free life wherever water, steam and corroding chemicals are freely used.

STRING GUARDS . . . Even though string and ravelings may wind around the hub, these string guards insure easy rolling at all times.

LUBRICATION . . . all swivel and wheel bearings are factory packed with a high quality grease that "stands up" under attack by heat and water. Zerk fittings are provided for quick grease-gun lubrication.

Always **SWIVEL**
and **ROLL**

A TYPE
AND SIZE
FOR EVERY
PURPOSE

*Free
Manual*

**DARNELL CORPORATION,
LTD.**

DOWNEY (LOS ANGELES COUNTY) CALIFORNIA
40 WALKER STREET, NEW YORK 13, NEW YORK
36 NORTH CLINTON STREET, CHICAGO 6, ILLINOIS

Circle No. 17 on Reader Service Card



GIVE ECONOMY A LIFT

There's one sure way to cut your load-handling costs. Use the 'Budgit' Electric Hoist. A few cents worth of electricity keeps the 'Budgit' going all day.

The 'Budgit' Electric Hoist is fast. A slight pull on the control cord of the 1/4-ton 'Budgit' lifts the full load a foot in less than two seconds with spur-gear efficiency.

The 'Budgit' is rugged, trouble-free, safe. All moving parts are heat-treated for extra strength. Anti-friction bearings contribute greatly to smooth operation and low power consumption. Separate automatic motor and load brakes are provided. The hooks won't fracture if the hoist is overloaded. Every provision is made to safeguard man, load, and hoist. No installation costs. No accessories to buy. The 'Budgit' is a complete, portable hoist—comes ready to hang up, plug in and use. Capacities: 250 to 4,000 lbs. AC and DC models. Priced from \$139. Ask your "Shaw-Box" Distributor for details or write for Bulletin 391.



A 'BUDGIT' I-BEAM TROLLEY makes any hoist more useful. Tough steel construction. Ball bearings in wheels. Capacities: 500 to 4000 lbs. Bulletin No. 390 sent on request.



'Budgit'®
ELECTRIC HOISTS

MANNING, MAXWELL & MOORE, INC.
MUSKEGON, MICHIGAN

Builders of "Shaw-Box" and "Load Lifter" Cranes, "Budgit" and "Load Lifter" Hoists and other lifting specialties. Makers of "Ashcroft" Gauges, "Hancock" Valves, "Consolidated" Safety and Relief Valves, "American" Industrial Instruments, and Aircraft Products.

Circle No. 36 on Reader Service Card

158

SALES FIELD

Continued

Company, Inc. is Herbert L. Waltman. The district covers Washington, Oregon, Western Idaho, Montana and North Dakota, with headquarters in Seattle. Waltman attended Northwestern University, and was in the construction business before joining Leschen in 1941.

Bill Greer was appointed as Better Packages, Inc. regional distributor for the state of Virginia, and has established complete sales and service headquarters at 110 North Eighth Street, Richmond.

Colorado, Wyoming, Utah and New Mexico will be covered for The Elwell-Parker Electric Company by Landes, Zachary and Peterson Com-

Circle No. 58 on Reader Service Card

**SAVE MANPOWER ...
SPEED LOADING ...
REDUCE COSTS**
with MILWAUKEE
MAGNESIUM
Dock boards for truck or rail

JOB-ENGINEERED
Design, size and capacity to fit your needs.



SERIES 'F'
Full length position lock, 60 models, to 3000 lbs. capacity.

Let MPM representatives recommend a cost-saving answer to your loading problems, with job-engineered or standard dockboards.



750 W. Virginia St., Milwaukee 4, Wis.
DESIGNERS and FABRICATORS for
INDUSTRY, COMMERCE and GOVERNMENT

'ever Investigate? ...

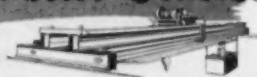
**CRANE
MODERN-
IZATION
INSTEAD OF
REPLACE-
MENT**

A good crane is capable of many years of service. When it does show serious signs of wear it can often be rebuilt and modernized in the process at a considerable saving under the price of a new crane.

Crane bridges rarely require replacement and the installation of a new trolley can provide the very latest developments and most efficient features of operation.

The advice of our engineers in such matters is available without obligation. Write for the new Euclid Catalog and call upon us if we can be of service.

Euclid Cranes



The EUCLID CRANE & HOIST Co.

1362 CHARDON ROAD
CLEVELAND 17, OHIO

A
typical
modern
Euclid
trolley

Circle No. 83 on Reader Service Card for more information

FLOW

pany, with offices at 2500 Seventh Avenue, Denver, Colorado. Partners of the concern, which was established eight years ago, include Ben D. Landes, J. E. Zachary and W. A. Peterson.

Manhattan Rubber Division, Raybestos-Manhattan, Inc., has announced the appointment of **Howell-Lanier Engineering Sales**, 4703 Ritchie Highway, Baltimore, Maryland, as metropolitan Baltimore distributor for Manhattan industrial rubber products.

Republic Steel Corporation has announced the appointment of **The Pat Donovan Company**, 53 Park Avenue, Dayton, Ohio, which will handle the sale and distribution of its materials handling equipment.

The newly-formed **Wiley Equipment Company**, Atlanta, Georgia, was recently appointed to sell and service products of the **Industrial Truck Division of Clark Equipment Company**. The firm is headed by **Eugene V. Wiley**.

Assistant general sales manager of **Hewitt-Robins Incorporated** is **Arthur W. Fasold**, a Cincinnati native and graduate of the University of Cincinnati. He entered the employ of the company in 1947 as an estimator, later became a field engineer, and most recently was assistant manager of the firm's commercial research department.

Baughman Manufacturing Company's eastern territory will be covered by **Leonard H. Lee**, who was recently appointed sales engineer for that area. He formerly served as domestic representative for **R. G. Le-**

Circle No. 72 on Reader Service Card for more information

1 man



handles Sheet Steel

Faster. Easier
with a

C-F LIFTER

C-F Lifters, under one man operation, pick up, carry and unload more sheet steel tonnage per hour than any other method — and at lower cost per ton. Wide carrying angles hold sheets securely — won't damage high grade sheets; tong action insures safe carrying; fast opening and closing adjustments of Lifter jaws permit shifting from one size pack to another in seconds. C-F Lifters are made in standard or semi-special models to handle from 2 to 60 tons.



CULLEN-FRIESTEDT CO.
1320 SOUTH KILBOURN AVENUE • CHICAGO 23, ILLINOIS

Write for Bulletin SL-28 for specific examples of C-F Lifter operation and economy.



GOES OVER BIG for wheeling and dumping heavy materials



*Costs Less
per Year*

Specify Sterling No. 119
HEAVY-DUTY CART
Pneumatic-tired wheels or steel wheels

Write for
Bulletin or
see nearest
dealer.

Some areas open
for dealerships.
Write . . .

Here's a cart that's "tailor-made" for wheeling coal, scrap, chips, turnings, borings and similar heavy materials. All-steel, completely welded and reinforced. Made extra strong and rugged for heavy-duty service. Dumps easily. Rests securely in any one of the three positions shown here. Available with steel wheels or pneumatic-tired wheels . . . plain or roller bearings.

STERLING WHEELBARROW CO., Milwaukee 14, Wis.



A HALF CENTURY
OF PROGRESS

Sterling

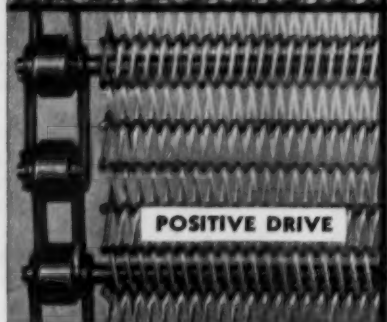
WHEELBARROWS

Look for this Mark of STERLING Quality

Circle No. 63 on Reader Service Card for more information



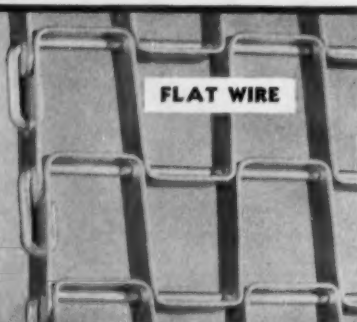
BALANCED WEAVE



POSITIVE DRIVE

ASHWORTH Process Belts

No matter what your product or process is, there's an Ashworth Belt design and wire size to help you carry it more efficiently and more economically.



FLAT WIRE

KEEP YOUR PRODUCT ON THE MOVE WITH ASHWORTH PROCESS BELTS

ASHWORTH BROS., INC.
METAL PRODUCTS DIV. • WORCESTER, MASS.

**Sales
Engineers:**

Buffalo • Chattanooga • Chicago • Cleveland • Detroit • Kansas City • Louisville
Los Angeles • New York • Philadelphia • Pittsburgh • Rochester • Seattle • St. Paul
Tampa • Canadian Rep., PECKOVER'S LTD. • Toronto • Montreal

WRITE FOR ILLUSTRATED CATALOG



**HARD TO BELIEVE
YOU CAN OWN THIS
LOADMOBILE
FORK TRUCK FOR
\$2.89* per day?**

**COSTS YOU
NOTHING
TO FIND OUT**

marforge

**IT'S IDEAL FOR SMALL
INSTALLATIONS IN MANUFACTURING-
PROCESSING - WAREHOUSING -
PRINTING, ETC.**

ONLY THE MARFORGE FORK TRUCK:

- * Has Small Size—Big Capacity
- * Lifts 2000 lbs. (plus 400 lbs. overload)
- * Weighs only 2600 lbs. (with battery)
- * Is so easy to operate
- * Turns on a dime
- * Does so many jobs
- * Gets loads in and out of trailers and trucks
- * Lifts—Moves—Stacks—Pushes—Pulls—Loads—Unloads
- * Costs so little
- * Saves you so much

*** WRITE FOR FULL INFORMATION
AND SPECIFICATIONS**

Market Forge Company
EVERETT 49, MASSACHUSETTS

57 Years in the Materials Handling Industry

Circle No. 75 on Reader Service Card for more information

SALES FIELD

Continued

Tourneau and sales manager for P. A. Ross Machinery Co. In order to facilitate complete coverage of the large territory, Lee will fly one of the company planes.

Morgans, Inc., 111 West Broad Street, Savannah, Georgia, was recently given exclusive sales and service rights in 19 Georgia counties for the Industrial Truck Division of Clark Equipment Company. Officers of the firm include Sam H. Morgan, president; Lorton S. Livingston, vice president and treasurer; and Edward H. Morgan, vice president and secretary.

The newly-formed Long-Talbot Equipment Company, 820 Blossom Street, Columbia,



**Christensen
HYDRAULIC
LOADING RAMPS**

Feature

**4 WAY MOVEMENT
UP, DOWN, IN & OUT**

**TWO MODELS
6' x 6' & 6' x 8'**

Up to 20,000 Lb. Capacity

FINGER-TIP CONTROL

WM. CHRISTENSEN Co., Inc.
DEPT. F-53 • YGRK, PA.

Circle No. 54 on Reader Service Card
FLOW

South Carolina, has been appointed to sell and service the products of the **Construction Machinery Division of Clark Equipment Company** for the entire state of South Carolina. Principals of the firm are Ray F. Long, president, and John Talbott, vice president and treasurer.

Don R. Williams of Portland, Oregon, has been named division sales manager of **Osgood-General**, and will serve Oregon, Washington and British Columbia, according to an announcement by **Kenneth Williamson**, general sales manager of the firm.

Wheeling Rubber Products, Inc., Wheeling, West Virginia, will distribute **Allis-Chalmers "Texrope"** equipment in six West Virginia and three Ohio counties. **R. A. Charlton** heads the firm, which was established in 1943.

Circle No. 107 on Reader Service Card for more information

PRE-PLAN WITH *Robo-Lift* FOR PROFITS

There is no one "best" answer to all materials handling problems involving free-flowing solids and granulars.

That's why Counsel's specialized experience in this important field can be of such practical value in developing the handling system and equipment that will increase your plant's efficiency — make substantial savings in your operational costs . . . and reduce

production delays to a minimum. Robo-Lift Elevating Conveyor systems are now in use with such diversified products as hardware, coke mixes, marshmallows, manganese dioxide, chocolate confections, etc.

If you want to modernize an existing line, expand your facilities, or apply automatic handling to manual operation, check Robo-Lift's many advantages. We'll be glad to discuss the application of Robo-Lift methods and equipment to your problem.



Please write for details.

COUNSEL MACHINE COMPANY, Inc.

8 Hathaway Street • Wallington, N. J.

Safe DRUM Handling



Easy to install on any standard lift truck.

LIFTS
TRANSPORTS
STACKS

TRAY-HART DRUM CARRIER

- Alignment compensator automatically places drums into gripping position.
- Carrier loads over drums.
- Gravity action causes gripping shoes to securely hold load.
- Release can only be effected by application of hydraulic pressure.
- Standard models handle standard 55-gallon drums in diameters from 22 1/4" to 24 1/4", and permit 6" variation in height in same load.
- Special types available for Monorail, Crane, and other applications.



TRAY-HART CYLINDER CARRIERS

- All sizes and types of cylinders handled with ease.
- Quantity according to lift truck capacity.
- Write for complete information

Manufactured by

WALZ & KRENZER, Inc.

22 Flint Street, Rochester 8, N. Y.

CUTTING Your Costs IS OUR BUSINESS

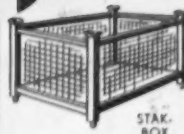


IT CAN BE DONE with **CERCO** STAK-PAL SYSTEM of Material Handling

STAK-PAL tubular stacking racks have been designed to handle quickly and efficiently your every storage need. Stacking operations are safer, easier and trouble-free with removable corner posts or end frames. **QUANTITY PRODUCTION, STANDARD SIZES** and our own **SEAMLESS TUBE MILL** assure you of a low cost product, combined with quality workmanship. All STAK-PAL tubing, square or rectangular has minimum 11 gauge wall for rugged strength and almost complete elimination of maintenance costs. Specials made to specifications.

Let us prove these facts —

Write for catalog giving you complete information.



STAK-BOX



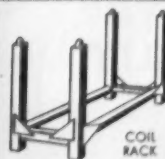
STAK-PAL

C. E. ROBINSON CO.



Manufacturers of
Metal Products

222 COLBURN AVENUE
JOLIET, ILLINOIS



COIL RACK



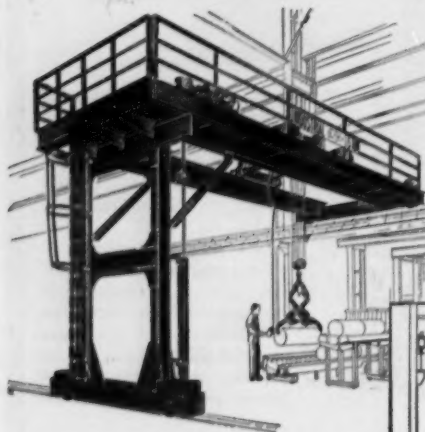
END FRAME RACK

Circle No. 141 on Reader Service Card
FEBRUARY, 1955

Circle No. 80 on Reader Service Card for more information

Industrial SEMI-GANTRYs for LOWER COST Handling

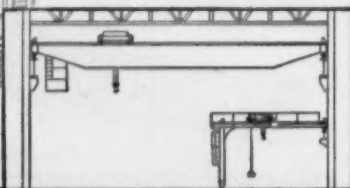
Another dependable member of the "Industrial Line"
of Quality Cranes



SG1254

Used in conjunction with other cranes Industrial Semi-Gantry often effect great savings. Here the Industrial Semi-Gantry loads billets onto conveyor, while heavy overhead crane is released for other duties.

Consult with Industrial Crane & Hoist Corporation for ways and means to lower your materials handling costs through most efficient use of Overhead Cranes, Jib Cranes and Monorail Systems.



INDUSTRIAL CRANE & HOIST CORPORATION

1531 SOUTH PAULINA STREET

CHICAGO 8, ILLINOIS

Overhead Cranes • Jib Cranes • Monorail Systems • Crane Runways
Representatives in Principal Cities

UNITABLE BELT CONVEYOR

For Assembly - Inspection - Packaging

The most ADAPTABLE portable conveyor you can find. Exclusive "unitized" design 10' to 80' lengths. Write for UNITABLE Bulletin now.



CONVEYOR SPECIALTY COMPANY INC.

36 Newport Avenue
North Quincy 71, Mass

Circle No. 46 on Reader Service Card for more information

USEFUL LITERATURE . . .

(Continued from page 148)

"Tools of Automation":

Reliance Electric and Engineering Company has prepared a 12-page booklet covering its electric motor drives, said to provide the "know-how" for automation of single machines or continuous processes. The literature is entitled "The Tools of Automation".

Circle 288 on Reader Service Card

Four-Wheel Steering:

A 4000 pound capacity, high lift platform truck with four-wheel steering, powered either by electric or gasoline-electric equipment, is detailed in a new four-page folder issued by The Elwell-Parker Electric Company.

Circle 289 on Reader Service Card

Cranes With Torque-Control:

Catalog 87, issued by Orton Crane & Shovel Company, describes in detail the Torque-Control unit, as well as its application to crawler cranes. According to the company, Torque-Control is the most adaptable and most satisfactory application of torque conversion to crane drives.

Circle 290 on Reader Service Card

Versatile Bulk Container:

Kaiser Nest-A-Bin Division has released a brochure on its bulk container, designed to cut handling costs all around.

Circle 291 on Reader Service Card

Magnesium Dockboard:

Magnesium Products of Milwaukee offers literature describing its magnesium dockboard which is said to meet the specific need for a dockboard in the light-duty range that can be used safely in a variety of locations. Outstanding features include integral formed side rails and full-length position locks.

Circle 292 on Reader Service Card

Fork Truck Performance Data:

A method for predetermining the times necessary for fork trucks to perform specific operations is provided in a Work Kit available from The Yale & Towne Manufacturing Company. The study is said to assist materially in determining the efficiency of trucks now in use, as well as planning for future needs.

Circle 293 on Reader Service Card

Industrial Elevators:

A 2-color, 8-page bulletin has been released by Humphrey Elevator Company covering the company's complete line of Manlift elevators. The elevators provide simultaneous up and down employee transportation with no waiting or delay.

Circle 294 on Reader Service Card

Transmission Costs Cut:

Details of how power transmission costs may be cut by using standard Cone-Drive reducers, gearsets and components are available in a bulletin titled "Standardized 7 Ways to Cut Your Power Transmission Costs", published by Cone-Drive Gears Division of Michigan Tool Company.

Circle 295 on Reader Service Card

Instrument Controls For Hopper Scales:

Indicating and recording systems for use with hopper scales are described in a new technical reference offered by Richardson Scale Company. One section discusses such features as interlocking switches, time delay before full-balance printing, partial draft printing, follower dial accuracy and dust control provisions.

Circle 296 on Reader Service Card

Manual or Battery Powered Stacker:

Allied Manufacturing & Sales Company is featuring its stackers in a late brochure. Both manual and battery powered units are interestingly described.

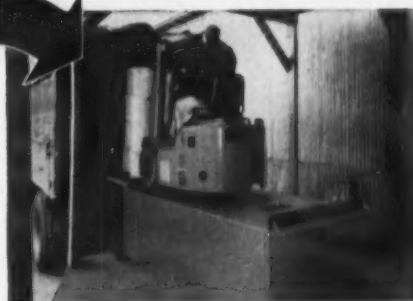
Circle 297 on Reader Service Card

Circle No. 52 on Reader Service Card for more information

Get a **LIFT** from **FIELD**... *The Complete* **HYDROILIC Line**

LOAD-O-MATIC

Automatically carries loads from loading dock to truck floor, whether truck is above or below dock. No hand switches! Exact levels! Can also be installed at ground level with rear safety barrier to prevent run-off. New Field HYDROILIC ram is free floating and rapid in operation. Models, 6000 to 20,000-pound capacity.

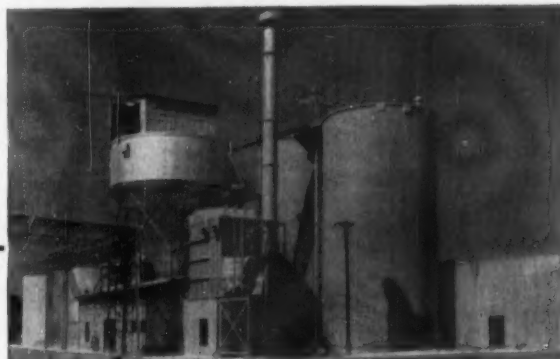
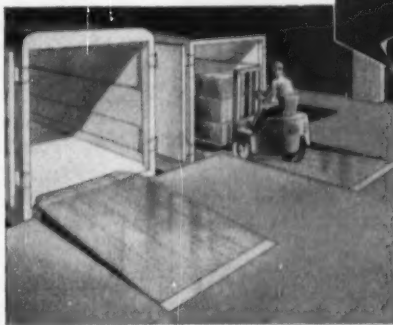


RAMP-O-MATIC

The leading automatic loading ramp because platform is built in five non-skid sections to compensate for out-of-level truck beds, or can be built with the usual one-piece solid top. Operated by the new Field HYDROILIC ram. Has no traveling hose. Motor and pump mounted on ramp. Automatically adjusts to any incline. Models, 10,000 and 20,000 lb. capacity.

FIELD ENGINEERING PRODUCTS CO.

66 FOOTE AVENUE, JAMESTOWN, N. Y.



2 New Neff & Fry Storage Bins

These 30' x 67'6" Neff & Fry Bins were recently erected at the Sandersville, Ga., plant of The Thiele Kaolin Company for handling and storing spray-dried coating clays.

This is an example of the thousands of bins we have built to handle more than 80 kinds of flowable bulk materials—principally ashes, cement, clay, coal, grain, gravel, lime, limestone, ore, sand, and wood chips.

Our bins have many advantages which are explained in our interesting folder entitled, "Bins With the Strength of Pillars." A copy is yours for the asking. No representative will call except by invitation.

Request the folder now while it's on your mind.

THE NEFF & FRY CO.
110 ELM ST. • CAMDEN, OHIO

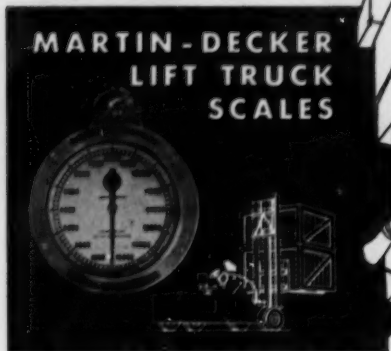
NEFF & FRY ▶ **SUPER-CONCRETE STAVE STORAGE BINS**

Circle No. 8 on Reader Service Card for more information

One fine

could have bought several

MARTIN-DECKER LIFT TRUCK SCALES



Weigh it!

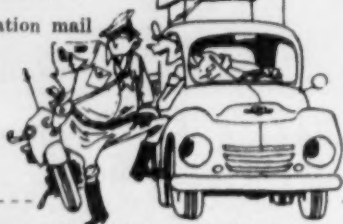
as you lift it

This inexpensive device shows the driver the exact weight picked up thus assuring a full load with safety. It can be used to totalize loads and check records of stock and inter-plant storage. Permits floor weight distribution. Prevents elevator overloads. Safeguards equipment and life.

*Fits any hydraulic
cylinder type lift truck*

After the simple installation your fork-lift truck becomes a scale that automatically weighs every load lifted, constantly reminding your operator of safety limits and saving him many time-consuming trips to stationary scales.

For further information mail coupon to Martin-Decker Corp., 3431 Cherry Ave., Long Beach 7, Calif.



- ☐ Please send literature on Martin-Decker Lift Truck Scale.
☐ Have local representative call for an appointment.

DEPT. N-5

NAME _____

TITLE _____

COMPANY _____

CITY _____

STATE _____

MARTIN-DECKER CORP.

1101 N. 10TH STREET, LONG BEACH, CALIF. 90802

Circle No. 84 on Reader Service Card for more information

164

NEW EQUIPMENT . . .

(Continued from page 50)

Bulk Handling Of Small Parts

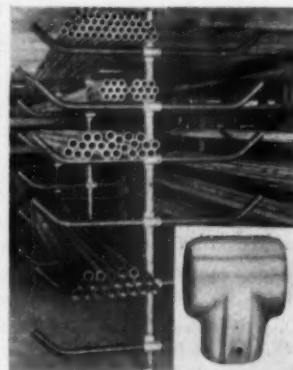
An all-purpose box that is ideal for handling work both in and out of process is being manufactured by The Powell Pressed Steel Company and is called the Flow-matic box. It is a clean line box with no protruding corners, channels, lugs, etc. to make lift truck handling difficult and hazardous. In the warehouse or stock control areas the off-set channel legs permit the boxes to be stacked as close as desired and still be handled easily by conventional methods. Open stand permits lift truck handling from any angle. Parts to receive work are contained in top box, emptying in hopper. A chute leads from the hopper to receiving box in the bottom of the stand. When part is finished it is dropped through chute into the bottom box as operator reaches for another part.



Circle 261 on Reader Service Card for more information

Easy Fitting

The Hollaender Manufacturing Company has available Nu-Rail slip-on fittings for adjustable racks of all descriptions. The fittings may also be used for pallet racks, pipe rod and bar racks, railings and stock shelving. They cover a complete range of I.P.S. from $\frac{3}{4} \times \frac{3}{4}$ inches to 2 x 2 inches, including reducing sizes from 1 x $\frac{3}{4}$ inches to 2 x 1 $\frac{1}{2}$ inches, and are made of high tensile aluminum alloy.



Circle 262 on Reader Service Card for more information

Improved Lubricator

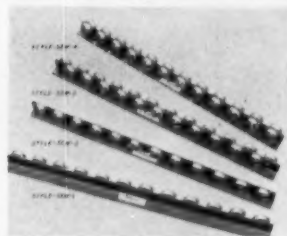
Improvements in the design of Keller Air Line Lubricators which permit a wider range of feed rates, air volume and oil viscosities, have been announced by the manufacturer. The redesigned lubricator employs a porous sintered bronze wick

FLOW

with a clear plastic enclosure tube which provides two oil feed ranges. Two orifice inserts can be used when it is desired to reduce the rated air capacity for low airflow applications.

Circle 263 on Reader Service Card for more information

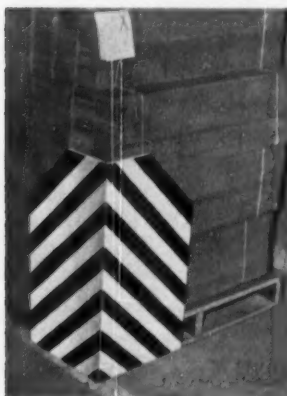
For Various Widths and Weights



Sage Equipment Company has added three new Wheelrail conveyors to its line of equipment. The units can be arranged to suit the width and weight of materials in various multiple combinations, and can be used to handle cylindrical objects. The conveyors provide inside and outside mounting, as well as staggered and opposite positioning of wheels.

Circle 264 on Reader Service Card for more information

Protects Loads



A steel guard which protects loads against traffic damage at every corner is being manufactured by Randolph Industrial Equipment Company. By slipping a steel gusset under the load, either on the floor or beneath a pallet, the Ranguard helps to prevent accidents and load damage caused when lifts and trucks scrape the corner of a load. The protector is available in two sizes for various sized loads, and is painted in bold black and yellow stripes.

Circle 265 on Reader Service Card for more information

Light, Maneuverable Pallet Truck



West Bend Equipment Corp. says its "Pal Boy" 2500 pound capacity lightweight pallet lift truck was developed for uses where fast, easy, one-level mobility is required. The truck is available in 24 and 27 inch widths and 36, 40, 42 and 48 inch fork lengths. Most models of the unit weigh less than 300 pounds. All wheels are of ball bearing design, with extra ball bearing booster rollers to

At Northrop Aircraft...
\$175,000 Annual Saving
with
TelAutograph*
TELESCRIBER SYSTEM
"Handwritten Communications System"

To prevent production delays, Northrop Aircraft Co., builder of Scorpion F-89D all-weather interceptors and Snark pilotless bombers, installed a TelAutograph Telescriber system in its plant at Hawthorne, California. Northrop estimates the system will save up to \$175,000 annually.

Heart of the entire system is Central Control. Here 8 TelAutograph Telescribers receive all shortage reports in operator's own handwriting from 37 sending stations along the production line. Central Control now has all information to eliminate "bottlenecks".

Advantages:

- Lost manhours due to material shortages eliminated.
- Provides means for job progress reporting.
- Material expeditors reduced.
- Assures Central Control of accurate information concerning assembly line progress at all times.
- Eliminates chance of costly verbal misunderstandings

*TM Reg. U.S. Pat. Off.

TelAutograph CORPORATION

Dept. F-52, 16 West 61st Street, New York 23, N. Y.
Please send me the full story of materials and production control with a TelAutograph Telescriber System.

Name _____
Street _____
City _____ State _____
Company _____

Circle No. 247 on Reader Service Card for more information

Circle No. 157 on Reader Service Card for more information

How To Save Money on your dock handling operations



84 Models To Meet Your Requirements

■ You're bound to lose efficiency, pay more than is necessary, when you purchase a dock levelling device that isn't specifically designed for your dock handling requirements. That's why Rowe Adjust-A-Docks are available in 84 models. There's one that will meet your specifications no matter what the problem. They can be installed recessed in your dock, partially recessed, or installed in front of the dock.

Write for free, illustrated brochure. It's brand new.

ROWE METHODS, INC.

2534-C DETROIT AVENUE • CLEVELAND 13, OHIO

provide easy entry into double-faced pallets. A full 270 degree lifting handle permits load lifting from any angle, and safety spring prevents the handle from dropping. The truck revolves in a full 360 degree swivel.

Circle 266 on Reader Service Card for more information

Weather-Resistant Conveyor

All stainless steel ball bearings are now available on gravity roller conveyor from Harry J. Ferguson Company. The units are sanitary, corrosion-resistant and can be washed or steam cleaned repeatedly. The bearings are available in conveyors in 2, 2¼ and 2½ inch diameter rollers, and are said to assure ease of maintenance and long service life.



Circle 267 on Reader Service Card for more information

Dual Purpose Truck

The Moto-Truc Company says its new Hi-Rider truck is a dual-purpose unit. It can be used for maintenance operations as well as a standard Hi-Lift for stacking. Complete controls for the truck go up with the operator who can control



GERBER'S BABY FOODS puts AUTOETTE to work solving production supervision problems!

Gerber's Oakland, California, plant employs 750 people in six buildings, widely separated over fifteen acres!

PROBLEM: Various departments are engaged in producing quality baby foods under rigid specifications, at assembly-line precision. Needed—quick, convenient transportation for plant administrative personnel.

SOLUTION: Autoette 4-Seater. Now Gerber supervisory personnel are swiftly on-the-spot with electric-powered, silent, odorless Autoettes. Outdoors or indoors, Autoette 4-Seater can unify your plant, too, bringing even distant locations only seconds away... help cut production costs and time. Why not write for information about it today?



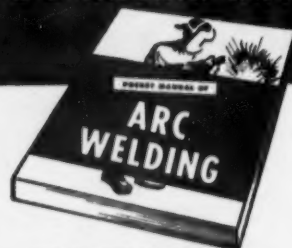
AUTOETTE

World's Lowest-Cost
Transportation

AUTOETTE, INC. • 730 West
Esther, Long Beach, California

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Here's a ^{new} book
YOU should have



JUST OFF THE PRESS

An Easy-to-use Reference Manual

Provides necessary one-the-spot information about many every day Arc Welding problems.

Contains 172 pages of practical welding data of value to department heads, supervisors, inspectors and welding operators.

Single copies \$1.25 each. Special discounts on orders of 25 or more. Attach check or money order to coupon below.

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forward and backward movement or up and down hydraulic lift from the top of the truck. As a safety factor, unit automatically eliminates all but the slow speed once the lift is over four feet in the air. Power is supplied by a 12 volt battery, and four point load suspension is said to insure truck stabilization. Minimum width of the unit is 36 inches.

Circle 268 on Reader Service Card for more information

No Lost Space

Among the new features incorporated in the improved design of Lewis-Shepard Company's Spacemaster Model "M" is the narrower width



at the operator's end of the truck. Only 32 inches wide at this point, it permits stacking 32 inch wide pallets in bulk storage without a loss of space between rows of pallets. The truck is equipped with a new magnetic controller which gives the operator three speeds forward and reverse with dynamic braking.

A solid, reinforced sheet steel guard 36 inches high protects the operator from behind and steadies him as he drives. Lifting height of the unit is 127 inches, and collapsed height 83.

Circle 269 on Reader Service Card for more information

Pulls or Lifts

New product of the Wright Hoist Division of



American Chain & Cable Company is a Pull-A-Way capable of pulling or lifting a ton-and-a-half. The unit weighs less than nine pounds, and is equipped with an automatic notch-per-cycle letdown that assures positive control, and safety handle that prevents serious overloading.

The 14 foot single strand aircraft cable will accommodate a 1500-pound pull, and double strand will accommodate 3000-pounds.

Circle 270 on Reader Service Card for more information

Package Unit Dockboard

A self-contained dockboard which requires no pit and is said to considerably reduce the cost of an adjustable dockboard installation is being manufactured by Dockboards, Incorporated. The units, built to match present dock heights, are shipped ready for placement in front of existing

NEW MULT-A-FRAME

bar stock racks

support 4,000 tons



An amazing example of the many applications possible with Mult-A-Frame is the mezzanine-type bar stock racks used by the Martin aircraft plant in Baltimore, Maryland. Here, 25 two-level racks with 4,000-ton capacity (one section illustrated above), were completely assembled, installed and loaded on the job during a four-week period. Each unit supports 160 tons, contains 80 compartments holding 4,000 lbs. each.

Exclusive, fully-locking MULT-A-FRAME is the new, lower cost framing material of "1,000 and ONE" uses. It is now being used to meet the needs of practically every industry. Easily assembled with a common wrench, MULT-A-FRAME structures can quickly be dismantled—either for moving or meeting new requirements.

A few of the many uses for MULT-A-FRAME, besides racks of all types, are: shelving, partitions, work platforms, benches and tables, concrete inserts, lighting fixture hangers, cable and pipe hangers, and beam clamps for electrical and maintenance use and many other framing uses.

FREE CATALOG

Write today for new 1955 MULT-A-FRAME catalog. It contains complete product and engineering information; shows you countless ways in which you can profitably use this ingenious money-saving material.



MULT-A-FRAME DIVISION

1471 East Atwater Street

Detroit 7, Michigan

Answorth Manufacturing Corporation

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Why pay more?

Specify the **RACK**
TURNABOUT®
ADJUST-A-FORK
HYDRAULIC LIFT TRUCK

only **\$350** for
complete truck



with
interchangeable
forks

featuring Overload Safety Valve!

The low cost, high quality Turnabout will save you many dollars in your pallet handling operations. Interchangeable forks supplied in five standard lengths—30", 36", 40", 42" and 48". Also available in 54" and 60" lengths, if desired. Capacity: 2,500 lbs.

RACK

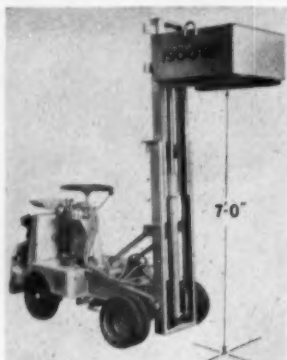
Write for Bulletin today!
Hydraulic Equipment Corp.
131 Sixth St., Connellsville, Pa.

facilities. The simple counterweighted design is said to eliminate the necessity for hydraulic or manually operated elevating mechanisms. Automatic adjustment is accomplished by the force exerted on the operating arm by the truck as it backs to the dock.

Circle 271 on Reader Service Card for more information

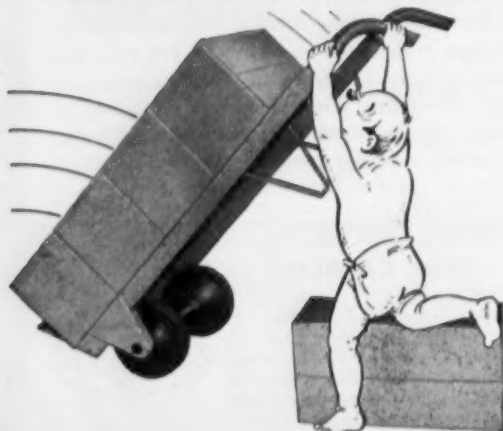
New Lifting Attachment

The development of a 1500 pound capacity hydraulic fork lift attachment for the Model R-15 Moto-Bug has been announced by the Kwik-Mix Company, subsidiary of the Koehring Company. The new unit is rated to lift its maximum $\frac{3}{4}$ ton load to a height of seven feet in 14 seconds. Availability of the attachment is said to greatly increase the truck's usefulness in many special handling problems. Moto-Bugs are equipped with full power forward and reverse through a directional transmission.



Circle 272 on Reader Service Card for more information

DICO TRUCKS... *Engineered* FOR **EASY TIPPING**



Yes, you can "break a load" faster and easier with a DICO truck! Every DICO truck is *scientifically engineered* for load-handling efficiency, with a minimum of labor and fatigue.

**QUALITY BUILT
FROM
HANDLE TO TOE**

Equipped with DICO Roller bearing *easy-rolling* wheels for smooth operation.



COMPARE BEFORE YOU BUY

If your jobber doesn't have a DICO Truck to fit your needs, write direct to the factory for catalog and complete information.

DICO

DES MOINES 5, IOWA

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**BOWERS
BATTERIES**

*Always
Better*

BOWERS BATTERY & SPARK PLUG CO., READING, PA.

Circle No. 67 on Reader Service Card
FLOW

Spot Orders

Metzgar Conveyor Company is manufacturing a conveyor unit which is designed primarily to speed and simplify order spotting on the loading dock. Called the Flex-A-Tail, the unit employs a permanently mounted Flex-A-Joint with a flexible assembly of split rollers, mounted in individual frames, moving on a stationary slider bed.

A portable mounted tail section of wheel or roller gravity conveyor is attached to the Flex-A-Joint. Set at any angle in an 80 degree arc, goods can be removed from the unit at any point along its length, and stacked for shipping over a large dock area.

Circle 273 on Reader Service Card for more information

Speeds Handling

A dual-jack hydraulic lift capable of handling 12,000 pound loads is being quantity produced by Rotary Lift Company. It is designed to raise loads from plant floor to trucks or different floor levels. Loading docks and ramps are eliminated, plant traffic is speeded and material handling costs cut, according to the manufacturer. Called

ElectroLift

WORM DRIVE HOIST

**thousands
in service
for
leading
manufacturers**



The finest recommendation for ElectroLift Hoists is their use by the thousands in the plants of America's industrial giants.

It will pay you to be guided by the experience of these leading firms. Long-lasting, dependable ElectroLift Hoists give you efficient, one-man

operation; a wide selection of speeds, capacities and controls.

For full details call your ElectroLift representative listed in the telephone directory.

ELECTROLIFT

ELECTROLIFT, INC., 204 Sargeant Ave., Clifton, N. J.

2825

Circle No. 16 on Reader Service Card for more information
FEBRUARY, 1955

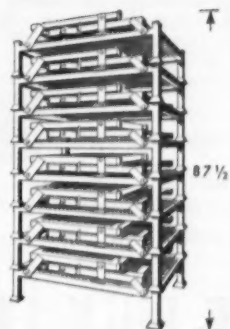


Paltier
FOLDING PYRAMID BOX

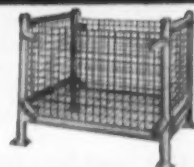
FOLDS DOWN TO
15 1/4" HIGH

*Patent Pending

Folding Pyramid Box



TIERED (FOLDED)
KNOCKED DOWN



READY FOR LOADING
TIERS SAFELY and QUICKLY



FRONT & BACK PANELS
FOLDED DOWN FLAT

NOW—STORE and SHIP This New Lower Cost Way

- A Rugged Folding Shipping Container
- Designed to out-last and out-perform ordinary wire containers.

TWO STANDARD SIZES

40" x 48" x 24" and 32" x 40" x 24"

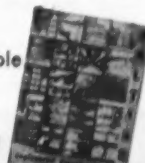
Two Ton Capacity • Weight: 200 lbs. Empty
Structural Tubular Uprights, Base and "X" Frame
Wire Mesh 2 x 2 x 2 Panels and Deck
Nesting Pyramids Permit Safe, Quick Stacking,
Open or Folded

The Most Economical Folding Box to Install and Maintain

Immediate Shipment

Other Capacities and Sizes Available
All Panels and Sides Replaceable

Write for 16 Page PALTIER Catalog

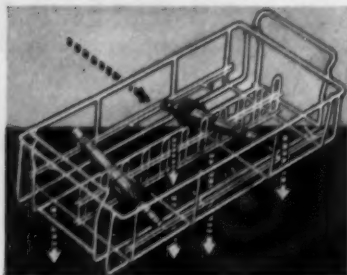


THE PALTIER CORPORATION
1709 KENTUCKY ST.
MICHIGAN CITY, IND.

Circle No. 59 on Reader Service Card for more information

Circle No. 250 on Reader Service Card for more information

This "Carrier" paid for itself 200 times



... and
still
in
service!

This "Carrier" handles automatic transmission splined shafts—carefully suspending the parts throughout processing. Each month it more than pays for itself in reduction of scrap or re-work, and elimination of non-productive transfer in and out of cleaning. It has been in service 10 years—will probably go 10 more with little maintenance. That's why every automatic transmission plant uses "Carriers". Whatever your parts, "Carriers" can do the same for you. Easy handling manually, by hand truck, on pallets, or conveyors. Accommodate 50%-300% more parts per square foot of floor area than any other method. They're also available for bulk handling.

this free brochure may help you.

MID-WEST

MID-WEST WIRE PRODUCTS CO., INC.
27 Years of Parts Handling Experience

2577 FENKELL

DETROIT 38, MICH.

the Levelator Lift, the unit has a 6 by 12 foot platform of non-skid steel plate; it will raise 5 feet 5 inches above plant floor, and when lowered becomes part of the floor. Operation is by Oilhydraulic power, and installation is said to be simple in old or new buildings.

Circle 274 on Reader Service Card for more information

Multi-Purpose Snatch Block

Madesco Tackle Block Company has introduced a lightweight, five ton, portable, multi-purpose all steel snatch block designed for use with 1/2 inch diameter wire rope. The unit weighs 22 pounds, has an overall length of 18 inches and is eight inches wide. It has a six inch diameter sheave made of drop forged steel and graphite bronze bearings. An extra heavy drop forged steel hook, safety locking head and links are features pointed out by the manufacturer.



Circle 275 on Reader Service Card for more information

VERSATILE BULK FEEDING... from a trickle to a torrent with VELOFEEDER

A mechanical vibrating feeder especially designed for all materials such as sugar, bran, pellets, feeds, chemicals, and grains at lower cost, higher efficiency.

Here's Why!

Higher Output—300 to 50,000 lb./hr. hard granular materials; 300 to 30,000 lb./hr. soft ground materials.

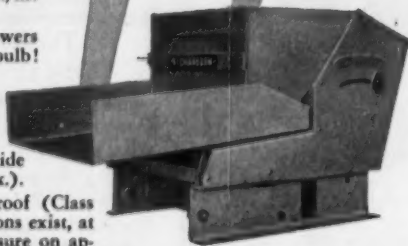
Lower Power Needs—1/8 hp. motor powers unit—inexpensive as a 100-watt light bulb!

Smaller Space Needs—35 inches long, 17 1/2 inches wide, 19 inches high. Standard vibrating tray 16 inches wide—stainless steel when required.

Easier Control—simple adjustment over wide operating range (near 0 to 50 fpm. max.).

Safer Operation—motor is explosion-proof (Class 2, Group G), where hazardous conditions exist, at slight extra cost. Complete dust enclosure on application.

Less Vibration—working frequency is 1850 vibrations per minute; little or no vibration is transmitted to mounting installation (mounts with only 4 bolts!).



If you're interested in better bulk feeding at lower operating cost, write for Bulletin 5302 with complete specifications and drawing.

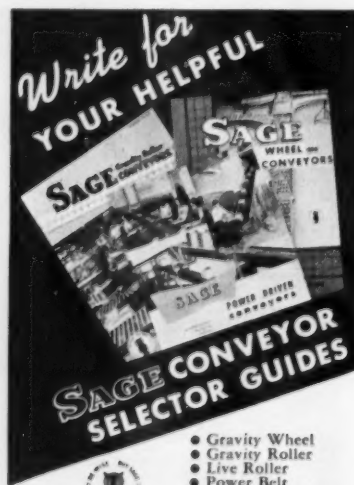
Richardson

SCALE COMPANY, Clifton, New Jersey

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New York • Omaha • Philadelphia • Pittsburgh • San Francisco • Wichita • Montreal
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MATERIALS HANDLING BY WEIGHT SINCE 1902

Circle No. 6 on Reader Service Card for more information



- Gravity Wheel
- Gravity Roller
- Live Roller
- Power Belt
- Floor-to-Floor and Many Others

SAGE specialists have designed America's most complete line of Gravity Wheel, Roller and Power conveyors. They can be laid out in single sections or countless combinations to move material faster, easier, in less space at reduced labor costs. There is a SAGE Conveyor engineer in your locality. Consult the yellow section of your telephone directory or write the Sage Equipment Company.

SAGE EQUIPMENT CO.

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BUFFALO 13, N. Y.

Circle No. 163 on Reader Service Card
FLOW

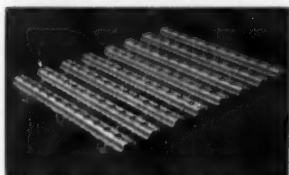
Handles Bulk

Baughman Manufacturing Company has designed a Bulkmobile for handling and transporting of big bulk jobs. The unit is automatic and self-unloading, and is said to save as much as 75 percent on handling time, as well as large savings on the bulk material itself. The model pictured has a capacity of 780 cubic feet, but other sizes are available. Discharge ranges from one-half to two tons per minute.

Circle 276 on Reader Service Card for more information

Bigger Payloads For Longer Distances

Something new in vent flooring and side rails for reefer truckers has been developed by Louisville Metal Products Company—all-aluminum units. The new vent floor racks and side rails were designed and manufactured of lightweight aluminum to cut down on dead weight and heat



MERRILL MATERIALS HANDLING DEVICES



MERRILL BROTHERS
56-74 ARNOLD AVENUE MASPETH, N. Y.

Circle No. 71 on Reader Service Card for more information
FEBRUARY, 1955

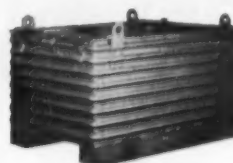
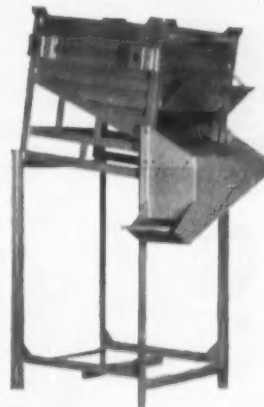
Move it or Stack it



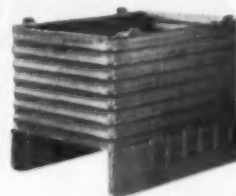
with **BRUSCO** HANDLING EQUIPMENT

No. H591 BRUSCO Slope Bottom Parts Box

With Lift Door, Combination Stand and Discharge Hopper. Engineered to let gravity bring parts down to correct working height. There are no work interruptions or parts "jam up" where this BRUSCO Unit is working for you. Hopper is interchangeable for right or left flow of material. Send for the descriptive, complete line BRUSCO Bulletin and name of your local representative.



No. 558
BRUSCO Corrugated Skid Boxes



No. 559

Also manufacturers of:

BOXES - SKIDS - PALLETS - RACKS
BRUSCO self dumping hoppers

When requesting price information, please give dimensions, load capacities and quantities.

Brusco

HANDLING EQUIPMENT

BRUMMELER STEEL PRODUCTS CORP.
1410 Ionia Ave., S. W., Grand Rapids, Mich.

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World Famous!

TYPE M
ELECTRIC HOIST

for ruggedness and simplicity, long life and low maintenance. A real material handling cost saver. Available in various suspensions and speeds; in capacities 1000 to 6000 lbs.



Ask for Bulletin 668

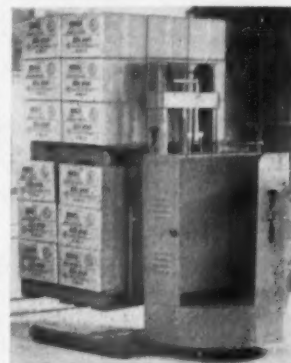
DETROIT HOIST & MACHINE CO.
Since 1905—Designers & Manufacturers of Hoists & Cranes
8249 Morrow St. • Detroit 11, Mich.

loss, and are said to be rugged and rot-proof. The lightweight has meant bigger payloads for longer distances, according to the manufacturer. The U. S. Government recently tested the units and soon will publish its successful findings.

Circle 277 on Reader Service Card for more information

Built-In Power

John Morrell Manufacturing Company has introduced a new straddle type stacker which will handle any load under 2000 pounds. Called the Morlift, the unit was designed for smooth floor operation, and comes complete with two 12 volt batteries and built-in charger. Specifications are: width—34 inches; length overall—34 inches plus load length; weight—approximately 1500 pounds; travel speeds—2 forward and 2 reverse; elevating speed—28 fpm; lowering speed—20 fpm.



Circle 278 on Reader Service Card for more information

Your Key to

**BETTER PERFORMANCE
LONGER SERVICE**

HOBBS Engine Hour METERS

*New and improved
through continuing
engineering research*

Your lift trucks and other powered materials handling equipment last longer and require fewer repairs when a definite program of protective maintenance is followed. **TIMELY** care prevents major repair... **HOBBS HOUR METERS** tell you **WHEN** it's time to lubricate, change oil, overhaul, etc.

NOT A REVOLUTION COUNTER

It's an electrical timing instrument that shows **HOURS** and **MINUTES** of any engine operation. Provides the accuracy

that's important for genuinely effective protective maintenance.

APPROVED BY LEADING MANUFACTURERS

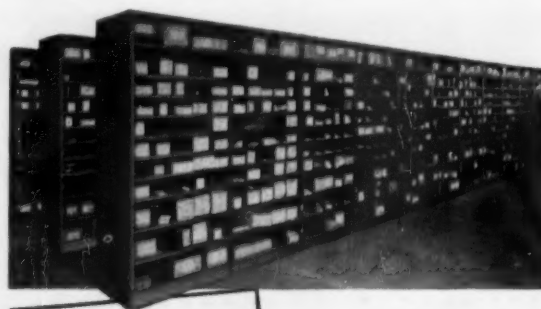
Installed as original equipment or recommended as an approved accessory by leading makers of materials handling equipment. Ruggedly built... easy to install... low in price. See your factory branch, representative or distributor... or **WRITE:**

ORIGINATED AND MANUFACTURED EXCLUSIVELY BY

John W. Hobbs Corporation
2061 YALE BLVD. SPRINGFIELD, ILLINOIS

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172



FREE
LAYOUT SERVICE
for all
storage needs

Trained Equipto engineers will lay out your storage facilities... suggest the number and types of units you will need... assure maximum use of every inch of floor space... increase working efficiency by expert arrangement of units. Take advantage of this free service. Ask our engineer to call, or write for catalog on complete line.

Equipto

DIVISION OF AURORA EQUIPMENT CO.

805 Prairie Ave., Aurora, Illinois

Steel Shelving... Parts Bins... Drawer Units

Circle No. 109 on Reader Service Card for more information

FLOW

Improved Belt Idler

The Jeffrey Manufacturing Company has announced the introduction of its latest MD and



HD series belt idlers with the new Duo-flex seal. Asserted to be a great advancement in the art of belt conveying, the idler is claimed to offer many features long desired by belt conveyor users. The main feature is the

dual flexible contact seals which perform the double function of keeping out dirt and retaining the grease for practically an endless period of time. The design of the idler permits re-greasing from either end.

Circle 279 on Reader Service Card for more information

Continuous Flow Batching

Control Engineering Corporation says its Gyro Mass Meter is the answer to continuous flow batching, inventory, cost-accounting and process control problems. To measure the mass flow of a fluid, the flowing stream is sent through a pipe of suitable shape so that the mass of material flowing corresponds to the rotating gyro wheel. Since the density of a homogeneous or non-homo-

JAKES

America's Finest
Industrial Trucks and Trailers

Model TT-10, "SAFE-TOW" conveyor truck for floor type conveyor, also available for overhead type conveyor. Low deck height 7-1/2", 6" rubber wheels, either molded-on type or demountable. Sealed ball bearings and sealed casters. Write for specification sheet.



JAKES FOUNDRY COMPANY

Established 1891

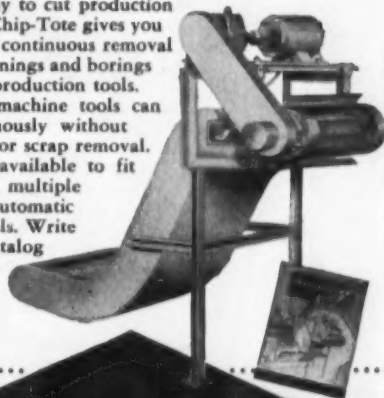
2800 Charlotte Avenue

Nashville 9, Tennessee

Circle No. 47 on Reader Service Card for more information
FEBRUARY, 1955

chip-tote®

Here's a way to cut production costs! The Chip-Tote gives you "hands-off" continuous removal of chips, turnings and borings from high production tools. Automatic machine tools can run continuously without shut-down for scrap removal. Chip-Totes available to fit all standard multiple spindle or automatic machine tools. Write today for catalog No. MF-640 and see the advantages available.



hinged steel belting

Here's a continuous belt conveyor made-up of heavy gauge steel links that are joined by high carbon steel rods. A May-Fran hinged steel belt will gather the turnings and borings from a battery of Chip-Totes or you can use the belt to handle hot, heavy or abrasive castings, forgings, metal blanks, or formed metal parts through production. Write today for No. MF-530 and get full details.



DESIGNERS AND ENGINEERS OF COMPLETE SCRAP HANDLING SYSTEMS

MAY-FRAN

ENGINEERING, INC.

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Circle No. 137 on Reader Service Card for more information



FRANKLIN
FINEST
QUALITY
SINCE
1936



SHELVING



HAND TRUCKS
BOX TRUCKS
DOLLIES



PARTS BINS



FACTORY
STOOLS



**STEEL
SHELVING**
AND
SHOP EQUIPMENT
BY
BERNARD FRANKLIN CO.
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3000 E. HEDLEY ST.
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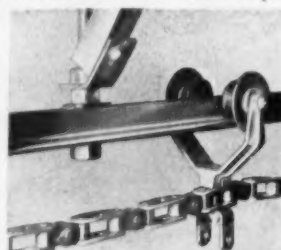
Write today!

geneous fluid might change, the pretzel-like configuration of pipe has been introduced to eliminate centrifugal and other effects due to the rotation.

Circle 280 on Reader Service Card for more information

Flexible and Simple Overhead Conveyor

A flexible and simple overhead chain conveyor is available from The Multi-Plane Chain Corporation. Neither the chain nor sintered steel trolley wheels require lubrication. Trolley yokes are cast of lightweight aircraft aluminum. The unit is built to take advantage of the full length of any dip tank as it has a minimum radius of turns and dips of six inches. Installation of the conveyor is said to be simple and easy, as no welding or special tools are required.



Circle 281 on Reader Service Card for more information

Light Capacity Hoist

An air hoist with a 150-pound capacity for light handling operations has been announced by Keller Tool Company. Said to be completely different in design, the convenient controls allow

Let WISCONSIN HEAVY-DUTY ENGINE POWER Carry the Load...

Whether handling bulk or packaged materials... on the loading dock, in the yard, plant or warehouse... you can depend on Wisconsin Heavy-Duty Air-Cooled Engines to carry the load with economy and efficiency.

When you specify "Wisconsin Power" for your material handling equipment, you are assured of dependable, heavy-duty "lugging power" that stays with the job. Carefully engineered heavy-duty design and construction and such features as tapered roller bearings at BOTH ends of the crankshaft, rotary type high tension OUTSIDE magneto with Impulse Coupling for easy starting in any weather at low cranking speeds, PLUS all-weather AIR-COOLING... these are some of the factors that contribute to stay-on-the-job dependability and long engine life.

Let Wisconsin Engines carry the load on your material handling equipment. A full range of sizes from 3 to 36 hp. provides the most complete power selectivity to fit both the machine and the job. Write for Bulletin S-164.

Model 3600 Kalamazoo
99w tractor.



Prime Mover,
made by Prime
Mover Co.,
Muscatine, Ia.



Hyster
"40" Lift Truck.



WISCONSIN MOTOR CORPORATION

World's Largest Builders of Heavy-Duty Air-Cooled Engines
MILWAUKEE 46, WISCONSIN

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NOLAN ONE-MAN CAR DOOR OPENER



Opens Any Box Car
Door in 20 Seconds
or Less! **\$37⁵⁰**
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110 Pennsylvania Street, Bowerston, Ohio

Please send ☐ ONE MAN CAR DOOR
OPENER at \$37.50
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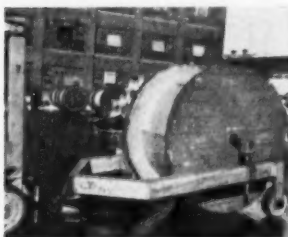
CITY ZONE STATE

Circle No. 69 on Reader Service Card
FLOW

the operator to raise or lower the load and swing it into position with one hand, leaving the other hand free to control other parts of machinery. Full-range speed control permits loads to be raised or lowered at any rate up to 40 feet per minute through a 9-foot lifting range.

Circle 282 on Reader Service Card for more information

Heavy Reel Carrier



Up to 32,000-pound reels of cable may be handled by the heavy reel carrier being marketed by Kenneth S. Fraser Co., Ltd., Industrial Truck Division. By application of simple laws of leverage, the rated capacity of a fork truck is said to be increased approximately eight times. When raised, reel weight is borne by two wheels of carrier. Carrier is supplied complete with fork attachment.

Circle 283 on Reader Service Card for more information

Push-Type Cranes

An expanded line of push-type cranes with new, improved construction features, has been

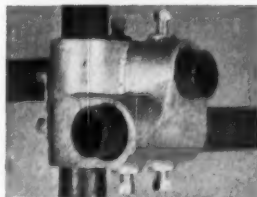
Make Your Own STORAGE RACKS



With

**AMIDON
FITTINGS**

AND YOUR
OWN PIPE



Strong • Economical • Adjustable

Write for further details

AMIDON ENGINEERING CO.
ELYRIA 9, OHIO

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FEBRUARY, 1955

Circle No. 55 on Reader Service Card for more information

PHOENIX ... Source for Cured-on Solid Tires

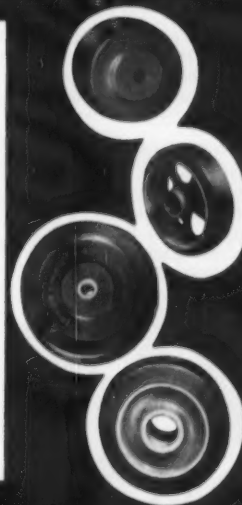
For twenty-five years Phoenix has been manufacturing industrial solid tires. Its central location at Joliet, Illinois, assures prompt delivery... and often lower transportation charges for castings.

Modern quality control procedures assure uniformity of tread stock compounds. **EXCLUSIVE WITH PHOENIX** is the famed "E-Z" Rolling Tread Compound. Also available are special tread compounds, including static conducting, hard rubber and oil-resisting treads!



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PHOENIX MANUFACTURING CO.
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Moving or Storing is Rapid, Convenient and Inexpensive with IRONBOUND SEMI-LIVE SKID PLATFORMS



Ruggedly built with capacities up to 2500 lbs. These units are quickly made mobile with the use of low cost lift jacks... One of the methods that Ironbound engineers use to increase production and conserve space at low cost.



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Here is the first riding sweeper ever developed to combine low cost with real sweeping ability. 40" sweeping width—up to 40,000 sq. ft. capacity per hour—300 cu. ft. per minute air dust removal. Highly maneuverable—easy-reach console controls—no foot or kick levers. Silencer—10 second hopper emptying—power to spare—optional sulky and fume arrester.

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No slip feature for positive locking.

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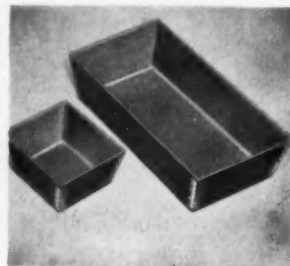
Circle No. 53 on Reader Service Card for more information
176

announced by Industrial Crane & Hoist Corporation. Light duty models are available in five different capacities and heavy duty models may be ordered in seven capacities. The heavy duty models feature smooth performance and ease of operation.

Circle 284 on Reader Service Card for more information

Durable Trays

Four standard stock sizes of Super Fibre Board trays are offered by National Metal Edge Box Company. Said to be lightweight and durable, the trays are widely used for production lines, conveyor lines, material handling and shelf storage purposes. The trays have metal reinforced corners to stand up under repeated handling. Celulustre treatment, inside and out, makes them moisture and grease resistant and easily cleanable.



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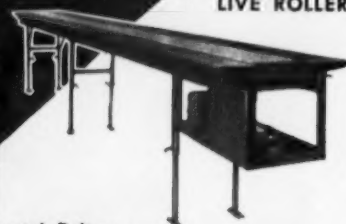
Tractor-Shovel

Recent addition to the line of equipment manufactured by Lessmann Manufacturing Company

CONSOLIDATE HANDLING and PRODUCTION

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**METZGAR
APRON
CONVEYOR**

BELT
or
LIVE ROLLER



Any Metzgar Horizontal Belt or Horizontal Live Roller Conveyor can be furnished with aprons attached to form a continuous bench-type working area—full length or in suitable work station lengths. Standard widths 9" and 12" from edge of belt. Other widths available.

MANY APPLICATIONS—Ask our engineers to show you how Apron Conveyors can serve you best. Explain your requirements.

*Continuous
Flow*

through all
successive
work stations

- assembly—
- inspection—
- packaging—
- and
- shipping

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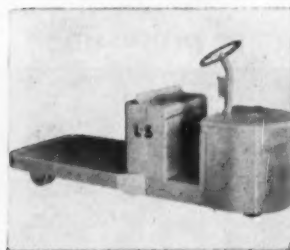
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FLOW

is the $\frac{3}{4}$ yard Loadall Loader Model GFT. The unit features front wheel drive, rear wheel steering, torque converter, and four forward and four reverse speeds. Bucket is 22 cubic foot struck capacity, 28 cubic foot heaped. Turning Radius is 11'8", and lifting capacity is 4000 pounds. A full line of attachments are available.

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Fast Transportation

A battery-powered pick-up truck which will carry up to a ton of miscellaneous freight at speeds of 5 to 6 mph, has been announced by Lewis-Shepard Products, Inc. Called the new Model "J" Totemaster electric truck, it is said to be ideal for interplant move-

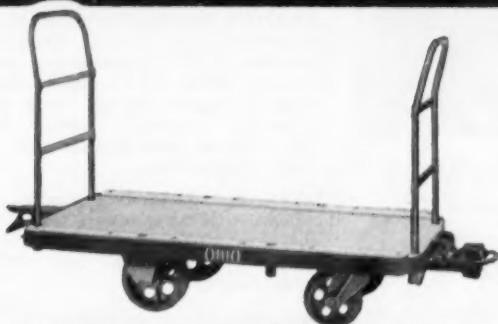


ments or use in shipping areas for fast transportation of loads. It can be equipped with four removable air cushion seats for plant tours. Specifications are: deck area 15 sq. ft.; deck height 9- $\frac{1}{2}$ inches; length 107- $\frac{1}{2}$ inches; width 40 inches; and turning radius 77- $\frac{1}{2}$ inches.

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OHIO

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One Piece Tee Section Steel Frame Trailers

No. 2001 size 36" wide x 72" long x 14" high—Two Ton Capacity with Automatic Coupler, Molded-On Tires and Hardwood Top.

Various Platform Sizes may be furnished.

Heavy Duty Trucks and Trailers to YOUR Specifications. Write for Detailed Information.

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NILES Established 1902 OHIO

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FEBRUARY, 1955

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Silent Hoist gave you KRANE KAR, the first modern Mobile Crane . . . Front-Wheel Drive . . . Stability without Stabilizers . . . Lifetime Front Axle . . . Automatic Safety Controls. And now Silent Hoist gives you **FLUID DRIVE!**

- ✓ Increases engine clutch life. ✓ Provides cushioned starting and acceleration. ✓ Eliminates overload shock damage to drive gears.
- ✓ Speeds operation. ✓ Cuts maintenance drastically.

Ask for Bulletin No. 79C

For BOX CAR Loading or Unloading
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New KRANE KAR Model AXB

Silent Hoist KRANE KAR Swing-Boom Mobile Crane . . .
1 $\frac{1}{2}$, 2 $\frac{1}{2}$, 5, 10, 12 $\frac{1}{2}$ Ton Cap.

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Pioneer Mfrs. of Heavy Duty Materials-Handling Equipment
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"UNDER-SIDE" DESIGN MAKES THE DIFFERENCE



Only in Bronco Magnesium Bridge Ramps do you get the exclusive "Under-Side" construction design that gives you greater strength, longer life with a minimum of weight. Bronco's "Under-Side" design is only one of the reasons why the 12,000 lb. capacity bridge ramp illustrated above is doing an outstanding job reducing materials handling costs at Alexander's Market Warehouse, Glendale, California.

Write today for complete information on all the features of Bronco Bridge Ramps.

- Low initial cost—lifetime service
- Maximum strength—minimum weight
- Safety tread surface for full traction
- Positive, adjustable locking device
- Side guards designed to prevent tire damage or equipment run-off
- Carloading or Truck Ramps—capacities from 1000 to 12,000 lbs.

Bronco's reinforced construction features offer maximum strength with a minimum of weight

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Magnesium
BRIDGE RAMPS

BRONCO PRODUCTS COMPANY
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Los Angeles 21, Calif.

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YES! I would like
to know more about



Special Motor Designs

☐ If your sales engineer will give me a ring, I'd like to talk to him
AND IN THE MEANTIME, you
might send me your bulletin on
Standard

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 - ☐ BRAKEMOTORS
 - ☐ WOUND ROTOR
 - ☐ D-C MOTORS
- Generators, M-G Sets

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(title)

At _____
(company)

_____ (street address)

(city) (zone) (state)



MOTOR DIVISION

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Circle No. 100 on Reader Service Card
178

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REVOLVATOR RED-GIANT features Safety-Ease



Durability—built in by 50 years of Revolvator Co. experience—is still the fundamental of the Red Giant lift truck line. Maneuverability, plus the safety of their exclusive double stroke mechanism, make the models shown leaders in their fields. There is a Red Giant lift truck available for every use—for every capacity.

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REVOLVATOR CO.

8739 Tonnele Ave., North Bergen, N. J.

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WOVEN WIRE

SLINGS

FOR EASIER AND SAFER

handling
or processing



EXTRA BROAD bearing surface gives greater strength, stability and maneuverability . . . even while moving heavy, bulky loads from point to point or through processing operations. Use either BASKET or CHOKE HITCH.

ONE MAN can fasten the load and operate the hoist. No fighting with kinks or tangles. No dangerous whipping or snarling of loose ends. Smooth woven wire construction eliminates sharp loose strands.

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AVAILABLE in standard lengths and widths with capacities up to 100,000 lbs. Special sizes on request. Every sling PRETESTED to meet loading specifications.

See your materials handling or mill supply distributor. Or, write direct for FREE catalog and name of nearest distributor.



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Circle No. 37 on Reader Service Card
FLOW

Advertisers' Index

A	
Acme Steel Co.	33 & 34
Ainsworth Mfg. Corp.	167
Alvey-Ferguson Co.	152
American Baler Co.	153
American Cable-Link Co.	141
American Chain & Cable Co., Inc.	97
American Engineering Co.	12
American Machine & Foundry Co.	151
American MonoRail Co.	14
Amidon Engineering Co.	175
Appleton Electric Co.	8
Arkansas Pallett Co.	157
Aro Equipment Corp.	31
Arrow Products Co.	58
Arrow Fastener Co., Inc.	132
Ashworth Bros., Inc.	160
Aurora Equipment Co.	172
Autoette, Inc.	166
Automatic Transportation Co.	1

B	
Baker Raulang Co.	17, 40
Barrett-Cravens Co.	112 & 113
Big Joe Mfg. Co.	4
Bigelow Garvey Lumber Co.	119
Bostitch, Inc.	131
Bowers Battery & Spark Plug Co.	168
Brainard Steel Co.	121
Bronco Products	177
Brooks & Perkins, Inc.	154
Brummeler Steel Products Co.	171
Buda Co.	49
Buffalo Weaving & Belting Co.	110
E. W. Buschman Co.	106

C	
Cambridge Wire Cloth Co.	178
Capco	134
Casco Container Co.	157
Chisholm-Moore Hoist Div.	16
Wm. Christensen Co.	160
C.I.T. Corp.	44
Clark Equipment Co.	23, 25, 27, 95
College of Production Technology	136
Colson Corp.	15
Colson Equipment Supply Co.	156
Conveyor Specialty Co., Inc.	162
Counsel Machine Co.	161
Cullen-Friededt Co.	159

D	
Darnell Corp.	157
Derby Sealers	132
Detroit Hoist & Machine Co.	172
Deluxe Metal Products Co.	180
Diamond Chain Co.	47
Dico Co.	168
Chas. Wm. Doepke Mfg. Co.	61
Durable Mat Co.	138

E	
Easiquip Co.	148
Economy Engineering Co.	46
Electric Storage Battery Co.	99
Electrolift, Inc.	169
Elwell-Parker Electric Co.	5 & 7
Euclid Crane & Hoist Co.	158

F	
A. B. Farquhar Div. The Oliver Corp.	156
Fastener Corp.	139

Fibre Specialty Div.	
National Vulcanized Fibre Co.	108
Field Engineering Products Co.	163
Dave Fischbein Co.	141
Bernard Franklin Co.	174

G	
Gaylord Container Corp.	135
General Box Co.	114
General Electric Co.	111
Gerotor May Corp.	155
Gerrard Steel Strapping Div.	
U. S. Steel Corp.	129
Gifford Wood Co.	24
Globe Hoist Co.	107
B. F. Goodrich Co.	59
Goodyear Tire & Rubber Co.	3
Adolph Gottscho, Inc.	139
Gould National Batteries, Inc.	63

H	
Harnischfeger Corp.	51, 93
Heil Co.	108
Hercules Motors Corp.	54
John W. Hobbs Corp.	172
Frank G. Hough Co.	20 & 21
Hyster Co.	13

I	
Industrial Crane & Hoist Corp.	162
Ironbound Box & Lumber Co.	175

J	
Jaeger Machine Co.	55
Jakes Foundry Co.	173

L	
Lamson Corp.	38
Lamson-Mobilift Corp.	39
G. B. Lewis Co.	150
Lewis-Shepard Products, Inc.	19
Lift Trucks, Inc.	98

M	
M. H. Standard Co.	176
Magline, Inc.	Inside Back Cover
Magnesium Co. of America	104
Magnesium Products of Milwaukee	158
Manning Maxwell & Moore	158
Marietta Concrete Corp.	30
Martin-Decker Corp.	164
Market Forge Co.	160
Marvel Schebler, Inc.	9
May-Fran Engineering, Inc.	173
Mead Corp.	133
Mercury Mfg. Co.	42 & 43
Merrill Brothers	171
Metzgar Conveyor Co.	176
Mid-States Gummed Paper Co.	140
Mid-West Wire Products Co.	170
Minnesota Mining & Mfg. Co.	117
Motorola, Inc.	28
Moto-Truc Co.	101

N	
Neff & Fry Co.	163
Nichols Paper Products Co.	134
Nolan Co.	174

O	
Ohio Galvanizing & Mfg. Co.	177
Ohio Hoist & Mfg. Co.	Inside Front Cover
Omic, Ltd.	45, 100
Oxy-Catalyst, Inc.	36

P	
Pak-Rapid, Inc.	140
Paltier Corp.	169
Parker Sweeper Co.	176
Phoenix Mfg. Co.	175
Pittsburgh Steel Products	64 & 65

R	
Rack Hydraulic Equipment Corp.	168
Rapids-Standard Co.	144 & 145, 146 & 147
Raymond Corp.	56 & 57
Revolator Co.	178
Richardson Scale Co.	170
C. E. Robinson Co.	161
Roura Iron Works, Inc.	58
Rowe Methods, Inc.	166

S	
Sage Equipment Co.	170
Signode Steel Strapping	137
Silent Hoist & Crane Co.	177
Simplicity Engineering Co.	66
Standard Conveyor Co.	26
Stanley Works, The	143
Star-Kimble Co.	178
Sterling Wheelbarrow Co.	159
Swing-Shift Mfg. Co.	154

T	
TelAutograph Corp.	165
G. H. Tennant Co.	10
Thermoid Co.	41
Thew Shovel Co.	103
Thomas Truck & Caster Co.	108
Towmotor Corp.	32
Tractomotive Corp.	53

U	
Union Metal Mfg. Co.	102
Union Special Machine Co.	134
Union Steel Products Co.	62
Unit Crane & Shovel Corp.	60

V	
Vibro Products	149
Vickers, Inc. Div. of Sperry Corp.	35
Visual Production Planning, Inc.	108

W	
Walz & Krenzer, Inc.	161
Wayne Mfg. Co.	37
Wayne Pump Co.	29
Jervis B. Webb Co.	11
Weber Addressing Machine Co.	132
West Bend Equipment Corp.	156
Whiting Corp.	2
Wirebound Box Mfg. Assn.	138
Wisconsin Motor Corp.	174

Y	
Yale & Towne Mfg. Co.	105

DeLuxe built-in FEATURES CUT INSTALLATION EXPENSE by 50%

By built-in features we mean the components of **DeLuxe** steel shelving are made at our factory. This permits easy assembly without the tedious, time-consuming jobs found necessary in assembling ordinary shelving.

Your **DeLuxe** dealer and our design engineering and estimating department, without obligation, will be pleased to work up an installation to fit your requirement—and show you how you can save 50% of installation expense.

FREE

48 PAGE CATALOG

Here is the **DeLuxe** craftsmanship story . . . told in this 48-page fully illustrated catalog. Request your free copy.



• Sets up quickly . . . utilizing sturdy one-piece L-beam uprights.



• Combination floor angle and shelf support provides flanged bearing surface to distribute load equally over large floor area; eliminates necessity of bolting bottom shelves. Facilitates vertical assembly.



• Four point suspension system cuts installation time! Shelves speedily attached at only four points by either a bolt or special shelf bracket.



• Shelves have reinforcing bars imbedded into front and rear flanges and returned into the end flanges where they engage the uprights.

For over 25 years our plant has been particularly devoted to the mass production of quality shelving.



A division of Royal Metal Manufacturing Company

DELUXE METAL FURNITURE CO.

325

STRUTHERS STREET, WARREN, PENNSYLVANIA

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"We Saved **SIX MAN HOURS** on the **FIRST THREE TRUCKS** we loaded!"

"I feel our Magliner Dock Board fully paid for itself in 60 days or less," says C. J. Monroe of Rycenga Manufacturing Company, Detroit, Michigan.

"We equipped our loading dock with a Magliner magnesium dock board after a thorough investigation of other products available, and only after considerable deliberation.

"We considered the possibility of a hydraulic leveling ramp at a cost of about \$3,000.00, but found that in addition to the relatively heavy initial investment required, this type of equipment also involved an element of maintenance.

"Just as important to us, however, as the substantial difference in initial expenditure, we felt that Magliner Dock Boards, at less than 1/4 the cost, would do a better job for us from an operational viewpoint alone.

"Our plant was recently built and occupies about 60,000 sq. ft. of floor space. It contains



Magnesium Light! Magnesium Strong!
Easy one-man handling!

a single station well, which is located inside the building. All our shipping and receiving is done at this point, so our Magliner dock board and ramp sees a lot of service.

"We saved 6 man hours on the first 3 trucks we loaded! I feel our Magliner fully paid for itself in 60 days or less!"

"The old steel plate we used before was a definite safety hazard. Our company regards our Magliner as an exceptional investment just from the safety angle alone. When you consider in addition, the time and money we are saving, plus the increased shipping and receiving capacity we get through the use of our Magliner dock board and ramp—I don't know of a better way to promote efficiency, safety, and economy on the loading dock."



Today's highway trailers vary greatly in floor height. To adequately service high-floor trailers, a ramp used in combination with the dock board is the most economical and practical solution. The ramp is used only when necessary to gain that additional height without exceeding permissible slope. The ramp is securely locked in position with Magliner's exclusive patented drop lock.

The experience of Rycenga Manufacturing Company is typical of many companies across the nation who have standardized on Magliner Dock Boards. Without exception these companies have found that Magliners speed loading traffic efficiently and safely, and cut loading costs. They too have found that Magline offers all the important dock board advantages.

Here are some of the many features which are available only with Magliner Dock Boards: Tire-Saver Safety Curbs—prevent power truck tire damage. Triple Strength Curb Ends—don't break loose, even under continuous daily abuse. Fully Adjustable Drop Lock—quickly adjusts to any height or span—automatically locks truck dock boards in position.

You too can save valuable man hours and cut loading costs with Magliner Dock Boards. Get the facts! Write today for your copy of DB-204.

FOR RAIL OR TRUCK



DOCK BOARDS

Write Today for Bulletin DB-204.

MAGLINE INC., P.O. Box 22, Pinconning, Michigan—Canadian Factory: Magline of Canada Limited, Renfrew, Ontario.

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Goodyear Announces

The First **TUBELESS** Pneumatic **INDUSTRIAL** Tire

Built with 3-T CORD

As manufacturer of America's most complete line of Industrial Tires, Goodyear is proud to announce the first Tubeless Pneumatic Industrial Tire. With it you get these big advantages that add up to better tire performance and lower tire costs:

Puncture-protective Grip Seal construction never before offered — tire clings to puncturing nails and other sharp objects to prevent loss of air.

Reduces "Down time." Tubeless tires permit repairs at regular maintenance checks.

Tubeless tires usually can be repaired without removing from wheel!

You get these advantages in a Goodyear Tubeless Pneumatic Industrial Tire because of its exclusive 3-T Cord body. Yet the price is the same as you'd pay for a conventional tire and tube.



For more information on this newest Goodyear Industrial Tire, see your Goodyear Dealer or write: Goodyear, Industrial Tire Division, Akron 16, Ohio.

USE THE RIGHT TIRE FOR THE JOB—USE

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INDUSTRIAL TIRES